

TENT COOPERATION TREA

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

GREEN, Clarence, A.
Perman & Green, LLP
425 Post Road
Fairfield, CT 06430
ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year) 16 November 2000 (16.11.00)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 328-121(PCT)	
International application No. PCT/US00/01294	International filing date (day/month/year) 19 January 2000 (19.01.00)

1. The following indications appeared on record concerning:

☐ the applicant ☐ the inventor ☒ the agent ☐ the common representative

Name and Address

CROZIER, John, H.
1934 Huntington Turnpike
Trumbull, CT 06611-5116
United States of America

State of Nationality

State of Residence

Telephone No.

203 375-9118

Facsimile No.

203 378 8108

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☒ the person ☐ the name ☐ the address ☐ the nationality ☐ the residence

Name and Address

GREEN, Clarence, A.
Perman & Green, LLP
425 Post Road
Fairfield, CT 06430
United States of America

State of Nationality

State of Residence

Telephone No.

203 259 1800

Facsimile No.

203 255 5170

Teleprinter No.

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

<input checked="" type="checkbox"/> the receiving Office	<input checked="" type="checkbox"/> the designated Offices concerned
<input type="checkbox"/> the International Searching Authority	<input type="checkbox"/> the elected Offices concerned
<input type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Jean-Marie McAdams

Telephone No.: (41-22) 338.83.38

003665170 2455960

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF RECEIPT
OF SEARCH COPY

(PCT Rule 25.1)

To:

JOHN H. CROZIER
1934 HUNTINGTON TURNPIKE
TRUMBULL CT 06611-5116

Date of mailing
(day/month/year)

23 MAR 2000

Applicant's or agent's file reference

328-121(PCT)

IMPORTANT NOTIFICATION

International application No.

PCT/US00/01294

International filing date (day/month/year)

19 JAN 00

Priority date (day/month/year)

19 JAN 99

Applicant

ASCOM HASLER MAILING SYSTEMS, INC.

1. Where the International Searching Authority and the receiving Office are not the same Office:

The applicant is hereby notified that the search copy of the international application was received by this International Searching Authority on the date indicated below.

Where the International Searching Authority and the receiving Office are the same Office:

The applicant is hereby notified that the search copy of the international application was received on the date indicated below.

23 MAR 2000

(date of receipt)

2. Time limit for establishment of international search report

The applicant is informed that the time limit for establishing the international search report is 3 months from the date of receipt indicated above or 9 months from the priority date, whichever time limit expires later.

3. A copy of this notification has been sent to the International Bureau and, where the first sentence of paragraph 1 applies, to the receiving Office.

Name and mailing address of the ISA/US

Assistant Commissioner for Patents

Box PCT

Washington, D.C. 20231

Facsimile No.

Attn: ISA/US

Authorized officer

Hal Saunders

Telephone No.

703-305-3663

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE
in its capacity as elected Office

Date of mailing (day/month/year) 17 November 2000 (17.11.00)	Applicant's or agent's file reference 328-121(PCT)
International application No. PCT/US00/01294	Priority date (day/month/year) 19 January 1999 (19.01.99)
International filing date (day/month/year) 19 January 2000 (19.01.00)	
Applicant LAY, Roger, F. et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
18 August 2000 (18.08.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Manu Berrod Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

From the RECEIVING OFFICE

PCT

INVITATION TO CORRECT DEFECTS IN THE INTERNATIONAL APPLICATION

(PCT Articles 3(4)(i) and 14(1) and Rule 26)

To: JOHN H. CROZIER 1934 HUNTINGTON TURNPIKE TRUMBULL CT 06611-5116	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 2px;">Date of mailing (day/month/year)</td> <td style="width: 50%; text-align: center; padding: 2px;">23 MAR 2000</td> </tr> </table>	Date of mailing (day/month/year)	23 MAR 2000
Date of mailing (day/month/year)	23 MAR 2000		
Applicant's or agent's file reference 328-121(PCT)	REPLY DUE within ONE MONTH from the above date of mailing		
International application No. PCT/US00/01294	International filing date (day/month/year) 19 JAN 00		
Applicant ASCOM HASLER MAILING SYSTEMS, INC.			

1. ☒ The applicant is hereby invited, within the time limit indicated above, to correct, in the **international application as filed**, the defects specified on the attached
- ☒ Annex A
 - ☐ Annex B1 (*text matter of the international application as filed*)
 - ☒ Annex C1 (*drawings of the international application as filed*)
2. ☐ The applicant is hereby invited, within the time limit indicated above, to correct, in the **translation of the international application** furnished under Rule 12.3, the defects specified on the attached
- ☐ Annex A
 - ☐ Annex B2 (*text matter of the translation of the international application*)
 - ☐ Annex C2 (*drawings of the translation of the international application*)

Additional observations (if necessary):

HOW TO CORRECT THE DEFECTS?

Correction must be submitted by filing a replacement sheet embodying the correction and a letter accompanying the replacement sheet, which shall draw attention to the difference between the replaced sheet and the replacement sheet. A correction may be stated in a letter only if it is of such a nature that it can be transferred from the letter to the record copy without adversely affecting the clarity and direct reproducibility of the sheet onto which the correction is to be transferred (Rule 26.4).

ATTENTION

Failure to correct the defects will result in the international application being considered withdrawn by this receiving Office (see Rule 26.5 for further details).

A copy of this invitation and any attachments has been sent to the International Bureau

☐ and the International Searching Authority.

Name and mailing address of the receiving Office Assistant Commissioner for Patents Box PCT Washington, D.C. 20231 Facsimile No.	Authorized officer <i>Hal Saunders</i> Telephone No. <i>703-305-3663</i>
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The receiving Office has found the following defects in the international application as filed:

1. As to signature* of the international application (Rules 4.15 and 90.4), the request:

- a. ☐ is not signed.
- b. ☒ is not signed by all applicants.
- c. ☐ is not accompanied by the statement referred to in the check list in Box No. VIII of the request explaining the lack of the signature of an applicant for the designation of the United States of America.
- d. ☒ is signed by what appears to be an agent/common representative but
 - ☒ the international application is not accompanied by a power of attorney appointing him.
 - ☐ the power of attorney accompanying the international application was not signed by all the applicants.
- e. ☐ other (specify):

* All applicants must sign, including inventors if they are also applicants (e.g. where the United States of America is designated).

2. As to indications concerning the applicant, the request (Rules 4.4 and 4.5):

- a. ☐ does not properly indicate the applicant's name (specify):
- b. ☐ does not indicate the applicant's address.
- c. ☐ does not properly indicate the applicant's address (specify):
- d. ☐ does not indicate the applicant's nationality.
- e. ☐ does not indicate the applicant's residence.
- f. ☐ other (specify):

3. As to the language of certain elements of the international application, other than the description and claims (Rules 12.1(c) and 26.3ter(a) and (c)):

- a. ☐ the request is not in a language which is both a language accepted by this receiving Office and a language of publication, which is (are):
- b. ☐ the text matter of the drawings is not in the language in which the international application is to be published, which is:
- c. ☐ the abstract is not in the language in which the international application is to be published, which is:

4. The title of the invention:

- a. ☐ is not indicated in Box No. I of the request (Rule 4.1(a)).
- b. ☐ is not indicated at the top of the first sheet of the description (Rule 5.1(a)).
- c. ☐ as appearing in Box No. I of the request is not identical with the title heading the description (Rule 5.1(a)).

5. As to the abstract (Rule 8):

- ☐ the international application does not contain an abstract.

The receiving Office has found that, with regard to the presentation of the drawings of the international application as filed, the physical requirements are not complied with to the extent that compliance therewith is necessary for:

1. ☐ reasonably uniform international publication (Rules 11 and 26.3(a)(i)) (defects to be specified)

Sheets containing drawings:

- a. ☐ the sheets do not admit of direct reproduction.
- b. ☐ the sheets are not free from creases, cracks, folds.
- c. ☐ one side of the sheets is not left unused.
- d. ☐ the paper of the sheets is not flexible/strong/white/smooth/non-shiny/durable.
- e. ☐ the drawings do not commence on a new sheet.
- f. ☐ the sheets are not connected as prescribed (Rule 11.4(b)).
- g. ☐ the sheets are not A4 size (29.7cm x 21cm).
- h. ☐ the minimum margins on the sheets are not as prescribed (top: 2.5cm; left side: 2.5cm; right side: 1.5cm; bottom: 1cm).
- i. ☐ the file reference number indicated on the sheets does not appear in the left-hand corner of the sheets, within 1.5cm of the top of the sheets.
- j. ☐ the file reference number exceeds the maximum of 12 characters.
- k. ☐ the sheets are not free from frames around usable or used surfaces.
- l. ☐ the sheets are not numbered in consecutive Arabic numerals (e.g. 1/3, 2/3, 3/3).
- m. ☐ the sheet numbers are not centered at the top or bottom of the sheets.
- n. ☐ the sheet numbers are in the margin (see h. above for the size of the margins).
- o. ☐ the sheets contain alterations/overwritings/interlineations/too many creases.
- p. ☒ the sheets contain photocopy marks.

Drawings (Rule 11.13):

- a. ☐ do not admit of direct reproduction.
- b. ☐ contain unnecessary text matter.
- c. ☐ contain words so placed as to prevent translation without interference with lines thereof.
- d. ☐ are not executed in durable black color; the lines are not uniformly thick and well-defined.
- e. ☐ contain cross-sections not properly hatched.
- f. ☐ would not be properly distinguishable in reduced reproduction.
- g. ☐ contain scales not represented graphically.
- h. ☒ contain numbers, letters and reference lines lacking simplicity and clarity.
- i. ☐ contain lines drafted without the aid of drafting instruments.
- j. ☐ contain disproportionate elements of a figure not necessary for clarity.
- k. ☐ contain numbers and letters of height less than 0.32 cm.
- l. ☐ contain letters not conforming to the Latin, and where customary, Greek alphabets.
- m. ☐ contain figures on two or more sheets which form a single complete figure but which are not able to be assembled without concealing parts thereof.
- n. ☐ contain figures which are not properly arranged and clearly separated.
- o. ☐ contain different figures not numbered in consecutive Arabic numerals.
- p. ☐ contain different figures not numbered independent of the numbering of the sheets.
- q. ☐ are not restricted to reference signs mentioned in the description.
- r. ☐ do not contain reference signs that are mentioned in the description.
- s. ☐ contain the same feature denoted by different reference signs.
- t. ☐ are not arranged in an upright position, clearly separated from one another.
- u. ☐ are not presented sideways with the top of the figures at the left side of the sheets.

2. ☐ satisfactory reproduction (Rules 11 and 26.3(b)(i)).

Further observations (if necessary):

SOLID BLACK OBJ.

NEW DRWGS. REQ.

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For Receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference
(if desired) (12 characters maximum)

328-121(PCT)

Box No. I TITLE OF INVENTION

Electronically Controlled Sealing Tape Dispenser and Method

Box No. II APPLICANT

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

ASCOM HASLER MAILING SYSTEMS, INC.
19 Forest Parkway
Shelton, Connecticut 06484-0903
US

☐ This person is also inventor.

Telephone No.

(203) 926-1087

Facsimile No.

(203) 926-0203

Teleprinter No.

State (that is, country) of nationality:

US

State (that is, country) of residence:

US

This person is applicant
for the purposes of:☐all designated
States☒all designated States except
the United States of America☐the United States
of America only☐the States indicated in
the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

LAY, Roger F.
58 Sherman Heights Road
Woodbury, Connecticut 06798
US

This person is:

☐ applicant only☒ applicant and inventor☐ inventor only (If this check-box
is marked, do not fill in below.)

State (that is, country) of nationality:

GB

State (that is, country) of residence:

US

This person is applicant
for the purposes of:☐all designated
States☐all designated States except
the United States of America☒the United States
of America only☐the States indicated in
the Supplemental Box☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:

☒

agent

☐

common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

CROZIER, John H.
1934 Huntington Turnpike
Trumbull, Connecticut 06611-5116
US

Telephone No.

(203) 375-9118

Facsimile No.

(203) 378-8108

Teleprinter No.

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

See Notes to the request form

Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

CROWE, Allen A.
76 Klein Drive
Prospect, Connecticut 06712
US

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
US

State (that is, country) of residence:
US

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

CIEPLAK, Joseph J.
71 Towne House Road
Hamden, Connecticut 06514
US

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
US

State (that is, country) of residence:
US

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

- ☐ applicant only
☐ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

State (that is, country) of residence:

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

- ☐ applicant only
☐ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

State (that is, country) of residence:

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on another continuation sheet.

Box No.V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

Regional Patent

- ☒ **AP ARIPO Patent:** GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SL Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☒ **EA Eurasian Patent:** AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ **EP European Patent:** AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ **OA OAPI Patent:** BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- | | |
|---|--|
| <input checked="" type="checkbox"/> AE United Arab Emirates | <input checked="" type="checkbox"/> LR Liberia |
| <input checked="" type="checkbox"/> AL Albania | <input checked="" type="checkbox"/> LS Lesotho |
| <input checked="" type="checkbox"/> AM Armenia | <input checked="" type="checkbox"/> LT Lithuania |
| <input checked="" type="checkbox"/> AT Austria | <input checked="" type="checkbox"/> LU Luxembourg |
| <input checked="" type="checkbox"/> AU Australia | <input checked="" type="checkbox"/> LV Latvia |
| <input checked="" type="checkbox"/> AZ Azerbaijan | <input checked="" type="checkbox"/> MA Morocco |
| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina | <input checked="" type="checkbox"/> MD Republic of Moldova |
| <input checked="" type="checkbox"/> BB Barbados | <input checked="" type="checkbox"/> MG Madagascar |
| <input checked="" type="checkbox"/> BG Bulgaria | <input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input checked="" type="checkbox"/> BR Brazil | <input checked="" type="checkbox"/> MN Mongolia |
| <input checked="" type="checkbox"/> BY Belarus | <input checked="" type="checkbox"/> MW Malawi |
| <input checked="" type="checkbox"/> CA Canada | <input checked="" type="checkbox"/> MX Mexico |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein | <input checked="" type="checkbox"/> NO Norway |
| <input checked="" type="checkbox"/> CN China | <input checked="" type="checkbox"/> NZ New Zealand |
| <input checked="" type="checkbox"/> CR Costa Rica | <input checked="" type="checkbox"/> PL Poland |
| <input checked="" type="checkbox"/> CU Cuba | <input checked="" type="checkbox"/> PT Portugal |
| <input checked="" type="checkbox"/> CZ Czech Republic | <input checked="" type="checkbox"/> RO Romania |
| <input checked="" type="checkbox"/> DE Germany | <input checked="" type="checkbox"/> RU Russian Federation |
| <input checked="" type="checkbox"/> DK Denmark | <input checked="" type="checkbox"/> SD Sudan |
| <input checked="" type="checkbox"/> DM Dominica | <input checked="" type="checkbox"/> SE Sweden |
| <input checked="" type="checkbox"/> EE Estonia | <input checked="" type="checkbox"/> SG Singapore |
| <input checked="" type="checkbox"/> ES Spain | <input checked="" type="checkbox"/> SI Slovenia |
| <input checked="" type="checkbox"/> FI Finland | <input checked="" type="checkbox"/> SK Slovakia |
| <input checked="" type="checkbox"/> GB United Kingdom | <input checked="" type="checkbox"/> SL Sierra Leone |
| <input checked="" type="checkbox"/> GD Grenada | <input checked="" type="checkbox"/> TJ Tajikistan |
| <input checked="" type="checkbox"/> GE Georgia | <input checked="" type="checkbox"/> TM Turkmenistan |
| <input checked="" type="checkbox"/> GH Ghana | <input checked="" type="checkbox"/> TR Turkey |
| <input checked="" type="checkbox"/> GM Gambia | <input checked="" type="checkbox"/> TT Trinidad and Tobago |
| <input checked="" type="checkbox"/> HR Croatia | <input checked="" type="checkbox"/> TZ United Republic of Tanzania |
| <input checked="" type="checkbox"/> HU Hungary | <input checked="" type="checkbox"/> UA Ukraine |
| <input checked="" type="checkbox"/> ID Indonesia | <input checked="" type="checkbox"/> UG Uganda |
| <input checked="" type="checkbox"/> IL Israel | <input checked="" type="checkbox"/> US United States of America |
| <input checked="" type="checkbox"/> IN India | |
| <input checked="" type="checkbox"/> IS Iceland | |
| <input checked="" type="checkbox"/> JP Japan | <input checked="" type="checkbox"/> UZ Uzbekistan |
| <input checked="" type="checkbox"/> KE Kenya | <input checked="" type="checkbox"/> VN Viet Nam |
| <input checked="" type="checkbox"/> KG Kyrgyzstan | <input checked="" type="checkbox"/> YU Yugoslavia |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea | <input checked="" type="checkbox"/> ZA South Africa |
| | <input checked="" type="checkbox"/> ZW Zimbabwe |
| <input checked="" type="checkbox"/> KR Republic of Korea | Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet: |
| <input checked="" type="checkbox"/> KZ Kazakhstan | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> LC Saint Lucia | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> LK Sri Lanka | |

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)

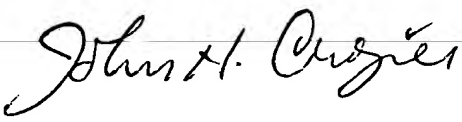
Box No. VI PRIORITY CLAIM		<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application:* regional Office	international application: receiving Office
item (1) 19 January 1999	60/116,275	US		
item (2)				
item (3)				

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): (1)

* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.

Box No. VII INTERNATIONAL SEARCHING AUTHORITY			
Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used).		Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):	
		Date (day/month/year)	Number Country (or regional Office)
ISA /			

Box No. VIII CHECK LIST; LANGUAGE OF FILING	
This international application contains the following number of sheets: request : 4 description (excluding sequence listing part) : 9 claims : 6 abstract : 1 drawings : 8 sequence listing part of description : Total number of sheets : 28	This international application is accompanied by the item(s) marked below: 1. <input checked="" type="checkbox"/> fee calculation sheet 2. <input type="checkbox"/> separate signed power of attorney 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: 4. <input type="checkbox"/> statement explaining lack of signature 5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): 6. <input type="checkbox"/> translation of international application into (language): 7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material 8. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form 9. <input type="checkbox"/> other (specify):
Figure of the drawings which should accompany the abstract: 1	Language of filing of the international application: English

Box No. IX SIGNATURE OF APPLICANT OR AGENT	
<small>Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).</small>	
John H. CROZIER 	

For receiving Office use only	
1. Date of actual receipt of the purported international application: 3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application: 4. Date of timely receipt of the required corrections under PCT Article 11(2): 5. International Searching Authority (if two or more are competent): ISA /	2. Drawings: <input type="checkbox"/> received: <input type="checkbox"/> not received: 6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.

For International Bureau use only
Date of receipt of the record copy by the International Bureau:

PCT

FEE CALCULATION SHEET Annex to the Request

For receiving Office use only

International application No.

Date stamp of the receiving Office

Applicant's or agent's
file reference

328-121(PCT)

Applicant

Ascom Hasler Mailing Systems, Inc., et al.

CALCULATION OF PRESCRIBED FEES

1. TRANSMITTAL FEE

240

T

2. SEARCH FEE

700

S

International search to be carried out by

(If two or more International Searching Authorities are competent in relation to the international application, indicate the name of the Authority which is chosen to carry out the international search.)

3. INTERNATIONAL FEE

Basic Fee

The international application contains 28 sheets.

first 30 sheets

427

b1

x

remaining sheets

additional amount

b2

427

B

Add amounts entered at b1 and b2 and enter total at B

Designation Fees

The international application contains 8+ designations.

8

x

92

=

736

D

number of designation fees
payable (maximum 10)

amount of designation fee

Add amounts entered at B and D and enter total at I

1163

I

(Applicants from certain States are entitled to a reduction of 75% of the international fee. Where the applicant is (or all applicants are) so entitled, the total to be entered at I is 25% of the sum of the amounts entered at B and D.)

4. FEE FOR PRIORITY DOCUMENT (if applicable)

15

P

5. TOTAL FEES PAYABLE

2118

Add amounts entered at T, S, I and P, and enter total in the TOTAL box

TOTAL

☐ The designation fees are not paid at this time.

MODE OF PAYMENT

☐ authorization to charge
deposit account (see below)

☐ bank draft

☐ coupons

☒ cheque

☐ cash

☐ other (specify):

☐ postal money order

☐ revenue stamps

DEPOSIT ACCOUNT AUTHORIZATION (this mode of payment may not be available at all receiving Offices)

The RO/ USPTO

☐

is hereby authorized to charge the total fees indicated above to my deposit account.

☒

(this check-box may be marked only if the conditions for deposit accounts of the receiving Office so permit) is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account.

☐

is hereby authorized to charge the fee for preparation and transmittal of the priority document to the International Bureau of WIPO to my deposit account.

03-3838

19 January 2000

Deposit Account No.

Date (day/month/year)

Signature

PCT

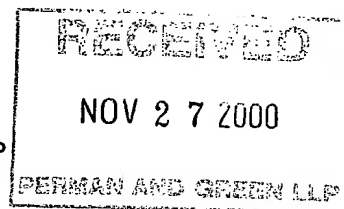
NOTIFICATION OF THE RECORDING
OF A CHANGE

(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

GREEN, Clarence, A.
Perman & Green, LLP
425 Post Road
Fairfield, CT 06430
ETATS-UNIS D'AMERIQUE



Date of mailing (day/month/year) 16 November 2000 (16.11.00)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 328-121(PCT)	
International application No. PCT/US00/01294	International filing date (day/month/year) 19 January 2000 (19.01.00)

1. The following indications appeared on record concerning: <input type="checkbox"/> the applicant <input type="checkbox"/> the inventor <input checked="" type="checkbox"/> the agent <input type="checkbox"/> the common representative		
Name and Address CROZIER, John, H. 1934 Huntington Turnpike Trumbull, CT 06611-5116 United States of America	State of Nationality	State of Residence
	Telephone No. 203 375-9118	
	Facsimile No. 203 378 8108	
	Teleprinter No.	
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning: <input checked="" type="checkbox"/> the person <input type="checkbox"/> the name <input type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence		
Name and Address GREEN, Clarence, A. Perman & Green, LLP 425 Post Road Fairfield, CT 06430 United States of America	State of Nationality	State of Residence
	Telephone No. 203 259 1800	
	Facsimile No. 203 255 5170	
	Teleprinter No.	
3. Further observations, if necessary:		
4. A copy of this notification has been sent to: <input checked="" type="checkbox"/> the receiving Office <input checked="" type="checkbox"/> the designated Offices concerned <input type="checkbox"/> the International Searching Authority <input type="checkbox"/> the elected Offices concerned <input type="checkbox"/> the International Preliminary Examining Authority <input type="checkbox"/> other:		

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Jean-Marie McAdams <i>JM</i> Telephone No.: (41-22) 338.83.38
---	--

PATENT COOPERATION TREATY

PCT

NOTICE INFORMING THE APPLICANT OF THE
COMMUNICATION OF THE INTERNATIONAL
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:

CROZIER, John, H.
1934 Huntington Turnpike
Trumbull, CT 06611-5116
ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year)

20 July 2000 (20.07.00)

Applicant's or agent's file reference

328-121(PCT)

IMPORTANT NOTICE

International application No.

PCT/US00/01294

International filing date (day/month/year)

19 January 2000 (19.01.00)

Priority date (day/month/year)

19 January 1999 (19.01.99)

Applicant

ASCOM HASLER MAILING SYSTEMS, INC. et al

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:

AU,CN,JP,KP,KR,US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

AE,AL,AM,AP,AT,AZ,BA,BB,BG,BR,BY,CA,CH,CR,CU,CZ,DE,DK,DM,EA,EE,EP,ES,FI,GB,GD,GE,
GH,GM,HR,HU,ID,IL,IN,IS,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MA,MD,MG,MK,MN,MW,MX,NO,NZ,
OA,PL,PT,RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TR,TT,TZ,UA,UG,UZ,VN,YU,ZA,ZW

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on
20 July 2000 (20.07.00) under No. WO 00/41960

REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer

J. Zahra

Telephone No. (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

INFORMATION CONCERNING ELECTED
OFFICES NOTIFIED OF THEIR ELECTION

(PCT Rule 61.3)

From the INTERNATIONAL BUREAU

To:

DEC 11 2000

GREEN, Clarence, A.
 Perman & Green, LLP
 425 Post Road
 Fairfield, CT 06430
 ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year) 17 November 2000 (17.11.00)		
Applicant's or agent's file reference 328-121(PCT)		IMPORTANT INFORMATION
International application No. PCT/US00/01294	International filing date (day/month/year) 19 January 2000 (19.01.00)	Priority date (day/month/year) 19 January 1999 (19.01.99)
Applicant ASCOM HASLER MAILING SYSTEMS, INC. et al		

1. The applicant is hereby informed that the International Bureau has, according to Article 31(7), notified each of the following Offices of its election:

AP : GH,GM,KE,LS,MW,SD,SL,SZ,TZ,UG,ZW
 EP : AT,BE,CH,CY,DE,DK,ES,FI,FR,GB,GR,IE,IT,LU,MC,NL,PT,SE
 National : AU,BG,CA,CN,CZ,DE,IL,JP,KP,KR,MN,NO,NZ,PL,RO,RU,SE,SK,US

2. The following Offices have waived the requirement for the notification of their election; the notification will be sent to them by the International Bureau only upon their request:

EA : AM,AZ,BY,KG,KZ,MD,RU,TJ,TM
 OA : BF,BJ,CF,CG,CI,CM,GA,GN,GW,ML,MR,NE,SN,TD,TG
 National : AE,AL,AM,AT,AZ,BA,BB,BR,BY,CH,CR,CU,DK,DM,EE,ES,FI,GB,GD,GE,GH,
 GM,HR,HU,ID,IN,IS,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MA,MD,MG,MK,MW,MX,PT,SD,
 SG,SI,SL,TJ,TM,TR,TT,TZ,UA,UG,UZ,VN,YU,ZA,ZW

3. The applicant is reminded that he must enter the "national phase" before the expiration of 30 months from the priority date before each of the Offices listed above. This must be done by paying the national fee(s) and furnishing, if prescribed, a translation of the international application (Article 39(1)(a)), as well as, where applicable, by furnishing a translation of any annexes of the international preliminary examination report (Article 36(3)(b) and Rule 74.1).

Some offices have fixed time limits expiring later than the above-mentioned time limit. For detailed information about the applicable time limits and the acts to be performed upon entry into the national phase before a particular Office, see Volume II of the PCT Applicant's Guide.

The entry into the European regional phase is postponed until 31 months from the priority date for all States designated for the purposes of obtaining a European patent.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer: Manu Berrod Telephone No. (41-22) 338.83.38
--	---

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To: CLARENCE A. GREEN
PERMAN & GREEN, LLP
425 POST ROAD
FAIRFIELD, CT 06430

RECEIVED

JAN 16 2001

PERMAN AND GREEN LLP

WRITTEN OPINION

(PCT Rule 66)

Date of Mailing
(day/month/year)

10 JAN 2001

Applicant's or agent's file reference

770P005460

REPLY DUE

within **TWO** months
from the above date of mailing

International application No.

PCT/US00/01294

International filing date (day/month/year)

19 JANUARY 2000

Priority date (day/month/year)

19 JANUARY 1999

International Patent Classification (IPC) or both national classification and IPC
Please See Supplemental Sheet.

Applicant

ASCOM HASLER MAILING SYSTEMS, INC.

1. This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

3. The applicant is hereby invited to reply to this opinion.

When? See the time limit indicated above. ~~The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).~~

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 19 MAY 2001

Name and mailing address of the IPEA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

KENNETH PETERSON

Telephone No. (703) 308-1148

Sheila Venev
Patent Specialist
Technology Center 3700

I. Basis of the opinion**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed
- ☒ the description:
pages 1-9 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____
- ☒ the claims:
pages 10-14 , as originally filed
pages NONE , as amended (together with any statement) under Article 49
pages NONE , filed with the demand
pages NONE , filed with the letter of _____
- ☒ the drawings:
pages 1-7 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____
- ☒ the sequence listing part of the
description: NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages: NONE
- ☒ the claims, Nos. NONE
- ☒ the drawings, sheets-fig. NONE

5. ☐ The opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed".

WRITTEN OPINION

International application No.

PCT/US00/01294

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. statement

Novelty (N)	Claims	<u>2-6, 9, 11-15, 18</u>	YES
	Claims	<u>1, 7-8, 10, 16-17</u>	NO
Inventive Step (IS)	Claims	<u>4, 13</u>	YES
	Claims	<u>1-3, 5-12, 14-18</u>	NO
Industrial Applicability (IA)	Claims	<u>1-18</u>	YES
	Claims	<u>NONE</u>	NO

2. citations and explanations

Claims 1, 7-8, 10 and 16-17 lack novelty under PCT Article 33(2) as being anticipated by Applicant Admitted Prior Art (AAPA).

See the specification pages 1-2 and 4. With respect to claims 7 and 16, the claims do not limit the length of first and second selected length to be different. Therefore, AAPA device does meet the limitation since it is noted that a second selected length of tape could be the same length as a first selected length. AAPA device automatically dispenses the second selected length in response to the removal of the first selected length from the dispenser.

Claims 2-3, 5-6, 11-12 and 14-15 lack an inventive step under PCT Article 33(3) as being obvious over Applicant's Admitted Prior Art (AAPA) in view of Hayashi et al.

AAPA discloses the invention substantially as claimed except for means mounted on the idler wheel shaft to measure rotation of the idler wheel shaft and to output a signal to the electronic means representative of rotations of the idler wheel shaft comprising an optical encoder and means to automatically correct for errors in length of the first selected length and electronic memory including correction lengths as a function of selected lengths. Hayashi teaches that it is old and well known in the art to mount an encoder on a non-driven roller independent of a driven roller to measure the distance of travel of the material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of AAPA to employ a means on a non-driven roller to measure the length of the material independent of the rotation of a driving mechanism as taught by Hayashi in order to obtain an accurate measurement of the distance of the material traveled. Furthermore, Hayashi also teaches a correcting arithmetic circuit (43) to perform a corrective operation of a cutting length with a correction value (N) to set the cutting length LO. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ an error correction device as taught by Hayashi in order to automatically correct errors in length.

(Continued on Supplemental Sheet.)

WRITTEN OPINION

International application No.

PCT/US00/01294

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

TIME LIMIT:

The time limit set for response to a Written Opinion may not be extended. 37 CFR 1.484(d). Any response received after the expiration of the time limit set in the Written Opinion will not be considered in preparing the International Preliminary Examination Report.

CLASSIFICATION:

The International Patent Classification (IPC) and/or the National classification are as listed below:

IPC(7): B65H 49/34, 20/02; G06F 19/00 and US Cl.: 225/10, 18; 83/363, 649, 74, 76.9; 700/167; 242/563, 564

V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):

Claims 9 and 18 lack an inventive step under PCT Article 33(3) as being obvious over Applicant's Admitted Prior Art (AAPA).

AAPA discloses the invention substantially as claimed except for remote second electronic controls operatively connected to the first electronic controls. However, it would have been an obvious matter of design choice to employ a remote second electronic controls to control a plurality of dispensers.

Claims 4 and 13 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a means to double or halve an increment of sealing tape length.

Claims 1-18 meet the criteria set out in PCT Article 33(4), because it can be made and used in the industry.

----- **NEW CITATIONS** -----

US 4,266,276 A (HAYASHI et al) 05 MAY 1981, see columns 3-5.

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the applicant. The full name or two-letter code of that Authority may be indicated by the applicant on the line below:

IPEA/ US

PCT

CHAPTER II

DEMAND

under Article 31 of the Patent Cooperation Treaty:
The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty and hereby elects all eligible States (except where otherwise indicated).

For International Preliminary Examining Authority use only

Identification of IPEA	Date of receipt of DEMAND
------------------------	---------------------------

Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION		Applicant's or agent's file reference 770P009746WO
International application No. PCT/US00/01294	International filing date (day/month/year) 19 January 2000 (19.01.00)	(Earliest) Priority date (day/month/year) 19 January 1999 (19.01.99)

Title of invention
ELECTRONICALLY CONTROLLED SEALING TAPE DISPENSER AND METHOD

Box No. II APPLICANT(S)

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) Ascom Hasler Mailing Systems, Inc. 19 Forest Parkway Shelton, Connecticut 06484 United States of America	Telephone No.:
	Facsimile No.:
	Teleprinter No.:

State (that is, country) of nationality: US	State (that is, country) of residence: US
--	--

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

LAY, Roger, F.
58 Sherman Heights Road
Woodbury, Connecticut 06798
United States of America

State (that is, country) of nationality: GB	State (that is, country) of residence: US
--	--

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

CROWE, Allen, A.
76 Klein Drive
Prospect, Connecticut 06712
United States of America

State (that is, country) of nationality: US	State (that is, country) of residence: US
--	--

☒ Further applicants are indicated on a continuation sheet.

Continuation of Box No. II APPLICANT(S)

If none of the following sub-boxes is used, this sheet is not to be included in the demand.

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

CIEPLAK, Joseph, J.
71 Town House Road
Hamden, Connecticut 06514
United States of America

State *(that is, country)* of nationality:
US

State *(that is, country)* of residence:
US

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

State *(that is, country)* of nationality:
US

State *(that is, country)* of residence:
US

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

☐

Further applicants are indicated on another continuation sheet.

Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The following person is ☒ agent ☐ common representative
 and ☐ has been appointed earlier and represents the applicant(s) also for international preliminary examination.
☒ is hereby appointed and any earlier appointment of (an) agent(s) /common representative is hereby revoked.
☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.

Name and address: *(Family name followed by given name; for a legal entity, full official designation.
 The address must include postal code and name of country.)*

Green, Clarence A.
 Perman & Green, LLP
 425 Post Road
 Fairfield, Connecticut 06430
 United States of America

Telephone No.:

203-259-1800

Facsimile No.:

203-255-5170

Teleprinter No.:

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION**Statement concerning amendments:***

1. The applicant wishes the international preliminary examination to start on the basis of:

☐ the international application as originally filed.

the description

☐

as originally filed

☐

as amended under Article 34

the claims

☐

as originally filed

☐

as amended under Article 19 (together with any accompanying statement)

☐

as amended under Article 34

the drawings

☐

as originally filed

☐

as amended under Article 34

2. ☐ The applicant wishes any amendment to the claims under Article 19 to be considered as reversed.

3. ☐ The applicant wishes the start of the international preliminary examination to be postponed until the expiration of 20 months from the priority date unless the International Preliminary Examining Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*

* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Language for the purposes of international preliminary examination: English☒

which is the language in which the international application was filed.

☐

which is the language of a translation furnished for the purposes of international search.

☐

which is the language of publication of the international application.

☐

which is the language of the translation (to be) furnished for the purposes of international preliminary examination.

Box No. V ELECTION OF STATES

The applicant hereby elects all eligible States *(that is, all States which have been designated and which are bound by Chapter II of the PCT)*

excluding the following States which the applicant wishes not to elect:

Box No. VI CHECK LIST

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

- | | | |
|---|---|----------|
| 1. translation of international application | : | sheets |
| 2. amendments under Article 34 | : | sheets |
| 3. copy (or where required, translation) of amendments under Article 19 | : | sheets |
| 4. copy (or, where required, translation) of statement under Article 19 | : | sheets |
| 5. letter | : | 1 sheets |
| 6. other (<i>specify</i>) | : | sheets |

For International Preliminary Examining Authority use only

received not received

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

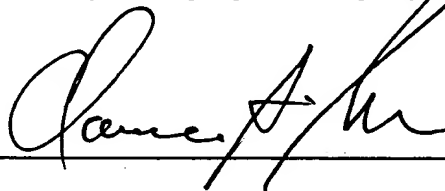
The demand is also accompanied by the item(s) marked below:

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> fee calculation sheet | 4. <input type="checkbox"/> statement explaining lack of signature |
| 2. <input type="checkbox"/> separate signed power of attorney | 5. <input type="checkbox"/> nucleotide and or amino acid sequence listing in computer readable form |
| 3. <input checked="" type="checkbox"/> copy of general power of attorney, reference number, if any: | 6. <input checked="" type="checkbox"/> other (<i>specify</i>): Check for payment of fees, |

Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).

Clarence A. Green
(Agent)



For International Preliminary Examining Authority use only

- Date of actual receipt of DEMAND:
- Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):
- ☐ The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply.
 ☐ The applicant has been informed accordingly.
- ☐ The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5.
- ☐ Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.

For International Bureau use only

Demand received from IPEA on:

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF RECEIPT OF
RECORD COPY

(PCT Rule 24.2(a))

From the INTERNATIONAL BUREAU

To:

CROZIER, John, H.
1934 Huntington Turnpike
Trumbull, CT 06611-5116
ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year) 29 March 2000 (29.03.00)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 328-121(PCT)	International application No. PCT/US00/01294

The applicant is hereby notified that the International Bureau has received the record copy of the international application as detailed below.

Name(s) of the applicant(s) and State(s) for which they are applicants:

ASCOM HASLER MAILING SYSTEMS, INC. (for all designated States except US)
LAY, Roger, F. et al (for US)

International filing date : 19 January 2000 (19.01.00)

Priority date(s) claimed : 19 January 1999 (19.01.99)

Date of receipt of the record copy
by the International Bureau : 21 March 2000 (21.03.00)

List of designated Offices :

AP : GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW

EA : AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

EP : AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

OA : BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

National : AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW

ATTENTION

The applicant should carefully check the data appearing in this Notification. In case of any discrepancy between these data and the indications in the international application, the applicant should immediately inform the International Bureau.

In addition, the applicant's attention is drawn to the information contained in the Annex, relating to:

☒ time limits for entry into the national phase

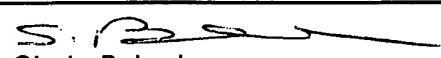
☐ confirmation of precautionary designations

☒ requirements regarding priority documents

A copy of this Notification is being sent to the receiving Office and to the International Searching Authority.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer:


Simin Baharlou

Facsimile No. (41-22) 740.14.35

Telephone No. (41-22) 338.83.38

INFORMATION ON TIME LIMITS FOR ENTERING THE NATIONAL PHASE

The applicant is reminded that the "national phase" must be entered before each of the designated Offices indicated in the Notification of Receipt of Record Copy (Form PCT/IB/301) by paying national fees and furnishing translations, as prescribed by the applicable national laws.

The time limit for performing these procedural acts is **20 MONTHS** from the priority date or, for those designated States which the applicant elects in a demand for international preliminary examination or in a later election, **30 MONTHS** from the priority date, provided that the election is made before the expiration of 19 months from the priority date. Some designated (or elected) Offices have fixed time limits which expire even later than 20 or 30 months from the priority date. In other Offices an extension of time or grace period, in some cases upon payment of an additional fee, is available.

In addition to these procedural acts, the applicant may also have to comply with other special requirements applicable in certain Offices. It is the applicant's responsibility to ensure that the necessary steps to enter the national phase are taken in a timely fashion. Most designated Offices do not issue reminders to applicants in connection with the entry into the national phase.

For detailed information about the procedural acts to be performed to enter the national phase before each designated Office, the applicable time limits and possible extensions of time or grace periods, and any other requirements, see the relevant Chapters of Volume II of the PCT Applicant's Guide. Information about the requirements for filing a demand for international preliminary examination is set out in Chapter IX of Volume I of the PCT Applicant's Guide.

GR and ES became bound by PCT Chapter II on 7 September 1996 and 6 September 1997, respectively, and may, therefore, be elected in a demand or a later election filed on or after 7 September 1996 and 6 September 1997, respectively, regardless of the filing date of the international application. (See second paragraph above.)

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

CONFIRMATION OF PRECAUTIONARY DESIGNATIONS

This notification lists only specific designations made under Rule 4.9(a) in the request. It is important to check that these designations are correct. Errors in designations can be corrected where precautionary designations have been made under Rule 4.9(b). The applicant is hereby reminded that any precautionary designations may be confirmed according to Rule 4.9(c) before the expiration of 15 months from the priority date. If it is not confirmed, it will automatically be regarded as withdrawn by the applicant. There will be no reminder and no invitation. Confirmation of a designation consists of the filing of a notice specifying the designated State concerned (with an indication of the kind of protection or treatment desired) and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.

REQUIREMENTS REGARDING PRIORITY DOCUMENTS

For applicants who have not yet complied with the requirements regarding priority documents, the following is recalled.

Where the priority of an earlier national, regional or international application is claimed, the applicant must submit a copy of the said earlier application, certified by the authority with which it was filed ("the priority document") to the receiving Office (which will transmit it to the International Bureau) or directly to the International Bureau, before the expiration of 16 months from the priority date, provided that any such priority document may still be submitted to the International Bureau before that date of international publication of the international application, in which case that document will be considered to have been received by the International Bureau on the last day of the 16-month time limit (Rule 17.1(a)).

Where the priority document is issued by the receiving Office, the applicant may, instead of submitting the priority document, request the receiving Office to prepare and transmit the priority document to the International Bureau. Such request must be made before the expiration of the 16-month time limit and may be subjected by the receiving Office to the payment of a fee (Rule 17.1(b)).

If the priority document concerned is not submitted to the International Bureau or if the request to the receiving Office to prepare and transmit the priority document has not been made (and the corresponding fee, if any, paid) within the applicable time limit indicated under the preceding paragraphs, any designated State may disregard the priority claim, provided that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity to furnish the priority document within a time limit which is reasonable under the circumstances.

Where several priorities are claimed, the priority date to be considered for the purposes of computing the 16-month time limit is the filing date of the earliest application whose priority is claimed.

PATENT COOPERATION TREATY

PCT

NOTIFICATION CONCERNING
SUBMISSION OR TRANSMITTAL
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

From the INTERNATIONAL BUREAU

To:

CROZIER, John, H.
1934 Huntington Turnpike
Trumbull, CT 06611-5116
ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year) 13 April 2000 (13.04.00)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 328-121(PCT)	
International application No. PCT/US00/01294	
International publication date (day/month/year) Not yet published	
Applicant ASCOM HASLER MAILING SYSTEMS, INC. et al	International filing date (day/month/year) 19 January 2000 (19.01.00) Priority date (day/month/year) 19 January 1999 (19.01.99)

1. The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
2. This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
3. An asterisk(*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
4. The letters "NR" appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
19 Janu 1999 (19.01.99)	60/116,275	US	03 Apr 2000 (03.04.00)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer

Carlos Naranjo

Telephone No. (41-22) 338.83.38



PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To: CLARENCE A. GREEN
PERMAN & GREEN, LLP
425 POST ROAD
FAIRFIELD, CT 06430

PCT

NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of Mailing
(day/month/year)

25 APR 2001

Applicant's or agent's file reference

770P009746WO

IMPORTANT NOTIFICATION

International application No.

PCT/US00/01294

International filing date (day/month/year)

19 JANUARY 2000

Priority Date (day/month/year)

19 JANUARY 1999

Applicant

ASCOM HASLER MAILING SYSTEMS, INC.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

KENNETH PETERSON

Telephone No. (703) 308-1148

Sheila Venev
Paralegal Specialist
Technology Center 3700

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 770P009746WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US00/01294	International filing date (day/month/year) 19 JANUARY 2000	Priority date (day/month/year) 19 JANUARY 1999
International Patent Classification (IPC) or national classification and IPC Please See Supplemental Sheet.		
Applicant ASCOM HASLER MAILING SYSTEMS, INC.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 18 AUGUST 2000	Date of completion of this report 12 APRIL 2001
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer KENNETH PETERSON
Facsimile No. (703) 305-3230	Telephone No. (703) 308-1148

Sheila Vanecko
Patent Specialist
Technology Center 3700

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/01294

I. Basis of the report**1. With regard to the elements of the international application:***☒ the international application as originally filed☒ the description:

pages 1-9 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

☒ the claims:

pages 10-14 , as originally filed
pages NONE , as amended (together with any statement) under Article 19
pages NONE , filed with the demand
pages NONE , filed with the letter of

☒ the drawings:

pages 1-7 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

☒ the sequence listing part of the description:

pages NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages NONE
☒ the claims, Nos. NONE
☒ the drawings, sheets/fig. NONE

5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

**Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/01294

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. statement**

Novelty (N)	Claims <u>2-6, 9, 11-15, 18</u>	YES
	Claims <u>1, 7-8, 10, 16-17</u>	NO
Inventive Step (IS)	Claims <u>4, 13</u>	YES
	Claims <u>1-3, 5-12, 14-18</u>	NO
Industrial Applicability (IA)	Claims <u>1-18</u>	YES
	Claims <u>NONE</u>	NO

2. citations and explanations (Rule 70.7)

Claims 1, 7-8, 10 and 16-17 lack novelty and an inventive step under PCT Article 33(2)-(3) as being anticipated by Applicant Admitted Prior Art (AAPA).

See the specification pages 1-2 and 4. With respect to claims 7 and 16, the claims do not limit the length of first and second selected length to be different. Therefore, AAPA device does meet the limitation since it is noted that a second selected length of tape could be the same length as a first selected length. AAPA device automatically dispenses the second selected length in response to the removal of the first selected length from the dispenser.

Claims 2-3, 5-6, 9, 11-12, 14-15 and 18 meet the criteria set out in PCT Article 33(2), because no single reference discloses the claimed invention.

Claims 2-3, 5-6, 11-12 and 14-15 lack an inventive step under PCT Article 33(3) as being obvious over Applicant's Admitted Prior Art (AAPA) in view of Hayashi et al.

AAPA discloses the invention substantially as claimed except for means mounted on the idler wheel shaft to measure rotation of the idler wheel shaft and to output a signal to the electronic means representative of rotations of the idler wheel shaft comprising an optical encoder and means to automatically correct for errors in length of the first selected length and electronic memory including correction lengths as a function of selected lengths. Hayashi teaches that it is old and well known in the art to mount an encoder on a non-driven roller independent of a driven roller to measure the distance of travel of the material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of AAPA to employ a means on a non-driven roller to measure the length of the material independent of the rotation of a driving mechanism as taught by Hayashi in order to obtain an accurate measurement of the distance of the material traveled. Furthermore, Hayashi also teaches a correcting arithmetic circuit (43) to perform a corrective operation of a cutting length with a correction value (N) to set the cutting length LO. It would have (Continued on Supplemental Sheet.)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/01294

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

CLASSIFICATION:

The International Patent Classification (IPC) and/or the National classification are as listed below:

IPC(7): B65H 49/34, 20/02; G06F 19/00 and US Cl.: 225/10, 18; 83/363, 649, 74, 76.9; 700/167; 242/563, 564

V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):

been obvious to one having ordinary skill in the art at the time the invention was made to employ an error correction device as taught by Hayashi in order to automatically correct errors in length.

Claims 9 and 18 lack an inventive step under PCT Article 33(3) as being obvious over Applicant's Admitted Prior Art (AAPA).

AAPA discloses the invention substantially as claimed except for remote second electronic controls operatively connected to the first electronic controls. However, it would have been an obvious matter of design choice to employ a remote second electronic controls to control a plurality of dispensers.

Claims 4 and 13 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a means to double or halve an increment of sealing tape length.

Claims 1-18 meet the criteria set out in PCT Article 33(4), because it can be made and used in the industry.

----- **NEW CITATIONS** -----

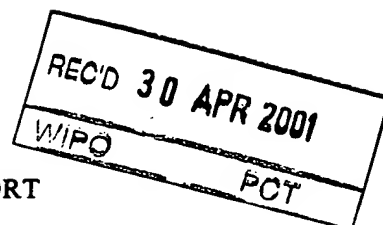
US 4,266,276 A (HAYASHI et al) 05 MAY 1981, see columns 3-5.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



14

Applicant's or agent's file reference 770P009746WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US00/01294	International filing date (day/month/year) 19 JANUARY 2000	Priority date (day/month/year) 19 JANUARY 1999
International Patent Classification (IPC) or national classification and IPC Please See Supplemental Sheet.		
Applicant ASCOM HASLER MAILING SYSTEMS, INC.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

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3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 18 AUGUST 2000	Date of completion of this report 12 APRIL 2001
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer KENNETH PETERSON
Facsimile No. (703) 305-3230	Telephone No. (703) 308-1148

Sheila Vanez
Patent Specialist
Technology Center 3700

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/01294

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed☒ the description:

pages 1-9 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

☒ the claims:

pages 10-14 , as originally filed
pages NONE , as amended (together with any statement) under Article 19
pages NONE , filed with the demand
pages NONE , filed with the letter of

☒ the drawings:

pages 1-7 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

☒ the sequence listing part of the description:

pages NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☒ The amendments have resulted in the cancellation of:☒ the description, pages NONE☒ the claims, Nos. NONE☒ the drawings, sheets/fig NONE5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

**Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/01294

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. statement**

Novelty (N)	Claims	<u>2-6, 9, 11-15, 18</u>	YES
	Claims	<u>1, 7-8, 10, 16-17</u>	NO
Inventive Step (IS)	Claims	<u>4, 13</u>	YES
	Claims	<u>1-3, 5-12, 14-18</u>	NO
Industrial Applicability (IA)	Claims	<u>1-18</u>	YES
	Claims	<u>NONE</u>	NO

2. citations and explanations (Rule 70.7)

Claims 1, 7-8, 10 and 16-17 lack novelty and an inventive step under PCT Article 33(2)-(3) as being anticipated by Applicant Admitted Prior Art (AAPA).

See the specification pages 1-2 and 4. With respect to claims 7 and 16, the claims do not limit the length of first and second selected length to be different. Therefore, AAPA device does meet the limitation since it is noted that a second selected length of tape could be the same length as a first selected length. AAPA device automatically dispenses the second selected length in response to the removal of the first selected length from the dispenser.

Claims 2-3, 5-6, 9, 11-12, 14-15 and 18 meet the criteria set out in PCT Article 33(2), because no single reference discloses the claimed invention.

Claims 2-3, 5-6, 11-12 and 14-15 lack an inventive step under PCT Article 33(3) as being obvious over Applicant's Admitted Prior Art (AAPA) in view of Hayashi et al.

AAPA discloses the invention substantially as claimed except for means mounted on the idler wheel shaft to measure rotation of the idler wheel shaft and to output a signal to the electronic means representative of rotations of the idler wheel shaft comprising an optical encoder and means to automatically correct for errors in length of the first selected length and electronic memory including correction lengths as a function of selected lengths. Hayashi teaches that it is old and well known in the art to mount an encoder on a non-driven roller independent of a driven roller to measure the distance of travel of the material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of AAPA to employ a means on a non-driven roller to measure the length of the material independent of the rotation of a driving mechanism as taught by Hayashi in order to obtain an accurate measurement of the distance of the material traveled. Furthermore, Hayashi also teaches a correcting arithmetic circuit (43) to perform a corrective operation of a cutting length with a correction value (N) to set the cutting length LO. It would have (Continued on Supplemental Sheet.)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/01294

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

CLASSIFICATION:

The International Patent Classification (IPC) and/or the National classification are as listed below:

IPC(7): B65H 49/34, 20/02; G06F 19/00 and US Cl.: 225/10, 18; 83/363, 649, 74, 76.9; 700/167; 242/563, 564

V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):

been obvious to one having ordinary skill in the art at the time the invention was made to employ an error correction device as taught by Hayashi in order to automatically correct errors in length.

Claims 9 and 18 lack an inventive step under PCT Article 33(3) as being obvious over Applicant's Admitted Prior Art (AAPA).

AAPA discloses the invention substantially as claimed except for remote second electronic controls operatively connected to the first electronic controls. However, it would have been an obvious matter of design choice to employ a remote second electronic controls to control a plurality of dispensers.

Claims 4 and 13 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a means to double or halve an increment of sealing tape length.

Claims 1-18 meet the criteria set out in PCT Article 33(4), because it can be made and used in the industry.

----- NEW CITATIONS -----

US 4,266,276 A (HAYASHI et al) 05 MAY 1981, see columns 3-5.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/01294

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B65H 49/34, 20/02; G06F 19/00
US CL : 225/10, 18; 83/363, 649, 74, 76.9; 700/167; 242/563, 564
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 225/10, 11, 17, 18; 83/363, 649, 74, 76.9, 241, 650; 700/167; 242/563, 563.2, 564.4, 564

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,581,514 A (INOUE) 08 April 1986, See column 4.	1-18
Y	US 4,151,403 A (WOOLSTON) 24 April 1979, See column 2.	3, 12
A	US RE.35,067 E (BAUKNECHT) 17 October 1995, See Figure 3.	1-18
A	US 4,996,901 A (FULLERON) 05 March 1991, See Figure 11.	1-18
A	US 3,949,918 A (GOLNER et al.) 13 April 1976, See column 2.	1-18
A	US 5,016,511 A (DANNATT) 21 May 1991, See column 4.	1-18

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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Date of the actual completion of the international search

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Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/01294

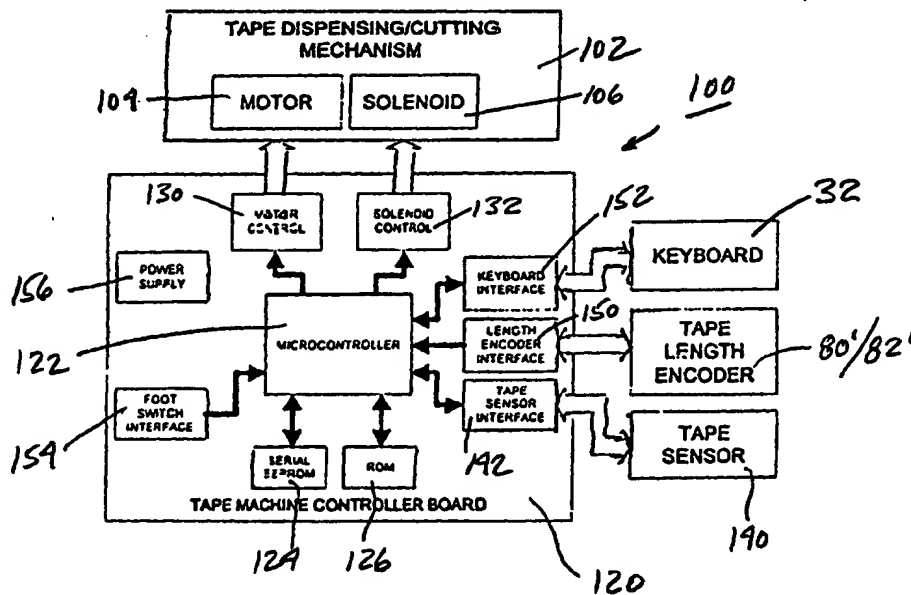
C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3,199,391 A (HANER et al.) 10 August 1965, See Figure 1.	1-18
A	US 5,117,367 A (HILL et al.) 26 May 1992, See Figure 7.	1-18
A	US 5,237,898 A (KUBISIAK) 24 August 1993, See Figure 4.	1-18
A	US 4,143,566 A (LACIAK et al.) 13 March 1979, See Figure 2.	1-18
A	US 5,417,796 A (LOVELACE et al.) 23 May 1995, See Figure 2.	1-18
A	US 4,543,863 A (RADER) 01 October 1985, See Figure 1.	1-18
A	US 4,834,309 A (RAYMOND) 30 May 1989, See column 2.	1-18
A	US 4,106,685 A (STRUNC et al.) 15 August 1978, See Figure 1.	1-18
A	US 5,048,737 A (SUEDA et al.) 17 September 1991, See Figure 1.	1-18
A	US 2,995,968 A (TOMBERG) 15 August 1961, See Figure 1.	1-18

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : B65H 49/34, 20/02, G06F 19/00	A1	(11) International Publication Number: WO 00/41960 (43) International Publication Date: 20 July 2000 (20.07.00)
(21) International Application Number: PCT/US00/01294 (22) International Filing Date: 19 January 2000 (19.01.00) (30) Priority Data: 60/116,275 19 January 1999 (19.01.99) US (71) Applicant (for all designated States except US): ASCOM HASLER MAILING SYSTEMS, INC. [US/US]; 19 Forest Parkway, Shelton, CT 06484-0903 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): LAY, Roger, F. [GB/US]; 58 Sherman Heights Road, Woodbury, CT 06798 (US). CROWE, Allen, A. [US/US]; 76 Klein Drive, Prospect, CT 06712 (US). CIEPLAK, Joseph, J. [US/US]; 71 Town House Road, Hamden, CT 06514 (US). (74) Agent: CROZIER, John, H.; 1934 Huntington Turnpike, Trumbull, CT 06611-5116 (US).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: ELECTRONICALLY CONTROLLED SEALING TAPE DISPENSER AND METHOD



(57) Abstract

In a preferred embodiment, an electronically controlled sealing tape dispenser (20, Fig. 1), including: a housing (30, Fig. 1); apparatus (32, Fig. 1) disposed in the housing (30, Fig. 1) to select a first selected length of sealing tape (70, Fig. 2) to be dispensed; apparatus (102, Fig. 4) disposed in the housing (30, Fig. 1) to dispense the first selected length of sealing tape (70, Fig. 4); and electronic apparatus (120, Fig. 4) to control dispensing of the first selected length of sealing tape (70, Fig. 4).

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Description
Electronically Controlled Sealing Tape
Dispenser and Method

5

Technical Field

The present invention relates to sealing tape dispensers generally and, more particularly, but not by way of limitation, to novel electronically controlled sealing tape dispenser and method of use.

Background Art

Mechanical and electronically controlled sealing tape dispensers are widely used for measuring a selected length of tape, cutting the tape, and also moistening the tape when required. The type of tape used with such machines can be paper, cloth, plastic, reinforced, or combinations of these, for example.

Previously known tape dispensers have certain limitations. For one, the length of tape is typically determined by use of an encoder attached to a motor-driven shaft that presses against one side of the tape, while an idler wheel presses against the other side of the tape. This arrangement is subject to slippage, both when the wheel starts rotating and when power is removed from the motor. The percentage slippage varies with the length of tape being dispensed. Also, the tape cannot be cut instantaneously so the machine commands the tape to be cut before the selected length has been reached. Errors in length can occur because of tape speed variations and the fact that more or less than the amount of expected tape can be dispensed because the tape speed is not factored into the method of determining when to cut the tape. To compensate for these errors, it is common to set the tape dispenser to dispense a length of tape greater than necessary. While

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this doesn't usually affect the sealing of a carton, for example, the unnecessary length results in extra cost.

Another limitation is that, although tape dispensers typically have means to add or subtract an increment of length and also have means to double or halve a selected length of tape, conventional tape dispensers have no means to double or halve the increment along with the selected length of tape.

A further limitation of conventional tape dispensers is that, if a length of tape different from the length of tape previously dispensed is desired, it is necessary to press the necessary length selection button(s) to have the second length dispensed. This requires additional time on the part of the operator and also offers the opportunity for the operator to request the wrong length of tape, thus creating unnecessary cost and/or waste. Some machines partially overcome this problem by providing a switch to select one length of tape or another.

Accordingly, it is a principal object of the invention to provide means and method to more accurately measure the length of tape being dispensed from a tape dispenser.

It is a further object of the invention to provide means and method to double or halve an increment of length added to or subtracted from a selected length of tape.

It is an additional object of the invention to provide means and method for automatically dispensing different lengths of tape without having to re-enter desired lengths to be dispensed.

It is another object of the invention to provide such means and method that are economically employed.

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Other objects of the present invention, as well as particular features, elements, and advantages thereof, will be elucidated in, or be apparent from, the following description and the accompanying drawing
5 figures.

Disclosure of Invention

The present invention achieves the above objects, among others, by providing, in a preferred embodiment,
10 an electronically controlled sealing tape dispenser, comprising: a housing; means disposed in said housing to select a first selected length of sealing tape to be dispensed; means disposed in said housing to dispense said first selected length of sealing tape; and
15 electronic means to control dispensing of said first selected length of sealing tape.

Brief Description of Drawings

Understanding of the present invention and the
20 various aspects thereof will be facilitated by reference to the accompanying drawing figures, submitted for purposes of illustration only and not intended to define the scope of the invention, on which:

Figure 1 is an isometric view of an electronic
25 tape dispenser in which the present invention may be employed.

Figure 2 is a fragmentary side elevational view of a conventional tape dispenser.

Figure 3 is a fragmentary side elevational view of
30 a tape dispenser according to the present invention.

Figure 4 is a block diagram of a control system according to the present invention.

Figure 5 is a top plan view of the tape dispenser keypad according to the present invention.

35 Figure 6 shows the sequence of steps for programming a tape dispenser of the present invention to automatically dispense desired lengths of tape.

Figure 7 is a block diagram of the control system of Figure 4 operatively connected to a remote host computer.

Figure 8 is a schematic/block diagram showing a plurality of electronic tape dispensing machines operatively connected to the host computer of Figure 7.

Best Mode for Carrying Out the Invention

Reference should now be made to the drawing figures, on which similar or identical elements are given consistent identifying numerals throughout the various figures thereof, and on which parenthetical references to figure numbers direct the reader to the view(s) on which the element(s) being described is (are) best seen, although the element(s) may be seen also on other views.

Figure 1 illustrates an electronically controlled tape dispenser of the type in which the present invention may be employed, the tape dispenser being generally indicated by the reference numeral 20.

Tape dispenser 20 includes a housing 30 having an external keypad 32 that includes a plurality of push buttons, as at 34. Push buttons 34 are used to select tape length to be dispensed from tape dispenser 20 and to perform other functions, as is described more fully below. Tape dispenser 20 further includes a water supply bottle 40, a water heater control 42, a slot 44 through which the tape (not shown) is dispensed, and a water applicator 46 for use when the tape is to be moistened. Electronic control circuitry is disposed within portion 50 of housing 30.

The elements of tape dispenser 20 described above are common both to conventional tape dispensers and to a tape dispenser in which the present invention may be employed.

Figure 2 illustrates the side of a conventional tape dispenser 60 that includes protruding therethrough a drive wheel shaft 62 and an idler wheel shaft 64. As

shaft 62 is coupled to an electric motor (not shown). To dispense tape 70 from tape dispenser 60, the idler wheel (not shown) mounted on idler wheel shaft 64 is raised by energization of a solenoid (not shown),
5 creating a nip between the idler wheel and the drive wheel (not shown) mounted on drive wheel shaft 62. Rotation of drive wheel shaft 62 thus causes tape 70 to be dispensed from tape dispenser 60. An apertured encoder wheel 80 is mounted to drive wheel shaft 62 to
10 rotate with the drive wheel shaft and an optical sensor 82 detects the rotation of the encoder wheel and provides an output signal representative of the number of rotations of the wheel. This signal is then used to determine the length of tape 70 dispensed. As is noted
15 above, however, slippage occurs between the drive wheel and tape 70, the percentage slippage varying in proportion to the length of the tape dispensed and, thus, the signal does not give an accurate measurement of the length of tape 70 dispensed. Furthermore, error
20 is introduced when tape 70 is cut, as is also noted above.

Figure 3 illustrates the approach of the present invention to overcoming the problem of errors in sensed dispensed tape length. Here, a tape dispenser 60' has a
25 drive wheel shaft 62' and an idler wheel shaft 64', all with the same forms and functions as described above with reference to Figure 2. In this case, however, an apertured encoder wheel 80' is mounted on idler wheel shaft 64'. An optical sensor 82' senses the rotation of
30 idler wheel shaft 64' and provides a much more accurate measurement of the length of tape 70' than does optical sensor 80 (Figure 2), since any movement of the tape will be sensed. Of course, other types of encoder devices may be employed as well.

35 Figure 4 illustrates a control system according to the present invention, the control system being indicated generally by the reference numeral 100. Control system 100 includes a tape dispensing/cutting

discussed above, and a solenoid 106 that operates a blade to cut the tape. Control system 100 also includes a tape machine controller board 120 that has a microcontroller 122 with memories 124 and 126.

5 Microcontroller 122 is connected to tape dispensing/cutting mechanism 102 through motor control 130 and solenoid control 132. Microcontroller 122 is also connected to an optical tape sensor 140 through a tape sensor interface 142, the optical tape sensor being
10 provided to sense the presence or absence of tape near its exit from the tape machine. Microcontroller 122 is further connected to tape length encoder 80'/82' (Figure 3) through a length encoder interface 150, to keyboard, or keypad, 32 through a keyboard interface 152, and to a
15 foot switch interface 154 that permits the tape machine to dispense tape when a foot switch (not shown) is depressed. A power supply 156 provides electrical power to the various components of control system 100.

Figure 5 illustrates keypad 32 and plurality of
20 push buttons, as at 34. Push buttons 34 that have numerals thereon can be depressed to command tape machine 20 (Figure 1) to dispense tape of a selected length. Push button 160 with "+" thereon adds and increment to the length of tape dispensed, push button
25 162 with "-" thereon subtracts an increment from the length of tape dispensed, while push button 164 doubles or halves the length of tape dispensed. Whether the length is doubled or halved depends on the length of tape selected, with the lengths of shorter pieces being
30 doubled and the lengths of longer pieces being halved. Push button 170 is used to select an automatic mode, discussed below, and depressing push button 172 will cause the tape machine to dispense tape as long as push button 172 is depressed. Push buttons 180 and 182
35 recall tape lengths tape previously entered into memory.

The present invention may provide a further method of improving tape length accuracy. In the present case, errors in tape length can be empirically determined.

(Figure 4) and the proper correction length can then be applied by microcontroller 122 for each length of tape selected. The data in memory 124 can take, for example, the form of a lookup table, with interpolation between entries if desired, or it can take, for example, the form of an algorithm for continuously variable correction lengths.

Microcontroller 122 (Figure 4) can also be programmed to double or halve a selected length of tape including any increment of length added to or subtracted from the selected length of tape. Thus, assume that the units on keypad 32 (Figure 5) were in inches and that one wished to dispense a piece of tape having a length of 26 inches. One could then, for example, depress push button "12", then depress push button "+" twice to add two increments of one-half-inch each, and then press push button "2X". Now, when push button "REPEAT/START" is depressed, a piece of tape having a length of 26 inches will be dispensed.

The use of push button 170 and suitable programming of microcontroller 122 can produce automatic dispensing of tape from tape dispenser 20 (Figure 1). Push button 170, "A", or "AUTO" (Figure 5) toggles the tape dispenser between automatic and normal modes. A buzzer can produce an audible beep when entering the automatic mode and when exiting back to normal mode. When the automatic mode is entered, the dispenser is ready to set up a tape sequence. Depressing push button 180, "REPEAT/START" (Figure 5), immediately after entering automatic mode will skip setup and use the last stored sequence. If no sequence is stored, then a default sequence, e.g., repeating four-inch lengths is used.

To set up a length sequence, the user begins by pressing push button 170 (Figure 5) to enter the automatic mode. The user then dispenses up to three pieces of tape of the length and in the order of the desired sequence. Microcontroller 122 (Figure 4) stores

push button 180, "REPEAT/START" (Figure 5), to begin the automatic sequence, at which time the first piece of tape in the sequence is produced. When the first piece of tape is removed, the tape dispenser automatically produces the second piece of tape in the sequence, and so on. The user actions and machine responses shown on Figure 6 indicate the process for setting up the tape dispenser to produce a continuous sequence of alternating 36- and 18-inch lengths of tape.

While the present invention is indicated, for illustrative and practical purposes, as being able to automatically produce up to three different lengths of tape to use, for example, an "H" pattern in sealing a carton, it will be understood that the present invention may be employed to produce any number of different lengths if desired.

Figure 7 illustrates control system 100 operatively connected to a remote host computer, or controller, 200. Host computer may actually provide control inputs for one or more of the functions of tape dispenser 20 and/or it may simply provide bookkeeping functions, such as tracking accumulated lengths of tape dispensed, the numbers of pieces of tape dispensed, the rate of use of the tape dispenser, or other items relating to the use of the tape dispenser. This information can be used, for example, to determine when the roll of tape in tape dispenser 20 requires replacement.

It will be understood that RS-232 driver/receiver transmission protocol may be used when host computer 200 is operatively connected only to tape dispenser 20 and that RS-485 driver/receiver transmission protocol may be used when more than one tape dispenser is operatively connected to the host computer. Transmission may be over hard wired lines or it may be via RF communication means.

Figure 8 illustrates the latter situation noted immediately above in which host computer 200 is

dispensers 300 and 302. Of course, any number of tape dispensers may be operatively connected to host computer 200.

In the embodiments of the present invention
5 described above, it will be recognized that individual elements and/or features thereof are not necessarily limited to a particular embodiment but, where applicable, are interchangeable and can be used in any selected embodiment even though such may not be
10 specifically shown.

Terms such as "upper", "lower", "inner", "outer", "inwardly", "outwardly", and the like, when used herein, refer to the positions of the respective elements shown on the accompanying drawing figures and the present
15 invention is not necessarily limited to such positions.

It will thus be seen that the objects set forth above, among those elucidated in, or made apparent from, the preceding description, are efficiently attained and, since certain changes may be made in the above
20 construction and/or method without departing from the scope of the invention, it is intended that all matter contained in the above description or shown on the accompanying drawing figures shall be interpreted as illustrative only and not in a limiting sense.

25 It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

30

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Claims

1. An electronically controlled sealing tape dispenser, comprising:
- 5 (a) a housing;
- (b) means disposed in said housing to select a first selected length of sealing tape to be dispensed;
- 10 (c) means disposed in said housing to dispense said first selected length of sealing tape; and
- (d) electronic means to control dispensing of said first selected length of sealing tape.
- 15 2. An electronically controlled sealing tape dispenser, as defined in Claim 1, further comprising:
- (a) an idler wheel fixedly mounted on an idler wheel shaft disposed in said housing, said idler wheel being disposed so as to rotate as
- 20 said first selected length of sealing tape is dispensed; and
- (b) means mounted on said idler wheel shaft to measure rotation of said idler wheel shaft and to output a signal to said electronic means
- 25 representative of rotations of said idler wheel shaft.
3. An electronically controlled sealing tape dispenser, as defined in Claim 2, wherein: said means
- 30 mounted on said idler wheel comprises an optical encoder.

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4. An electronically controlled sealing tape dispenser, as defined in Claim 1, further comprising:

- 5 (a) means to add or subtract an increment of sealing tape length to or from said first selected length of sealing tape; and
(b) means to double or halve length of said first selected length of sealing tape;

and wherein:

- 10 (c) said means to double or halve length of said first selected length of sealing tape also doubles or halves, respectively, said increment of sealing tape length.

15 5. An electronically controlled sealing tape dispenser, as defined in Claim 1, further comprising:
means to automatically correct for errors in length of said first selected length of sealing tape.

20 6. An electronically controlled sealing tape dispenser, as defined in Claim 5, further comprising:
electronic memory which includes therein correction lengths as a function of selected lengths of sealing tape.

25 7. An electronically controlled sealing tape dispenser, as defined in Claim 1, further comprising:
means to automatically dispense from said sealing tape dispenser a second selected length of sealing tape after said first selected length of sealing tape is removed
30 and in response to said first selected length of sealing tape is removed from said electronically controlled sealing tape dispenser, without any other action on the part of an operator of said electronically controlled sealing tape dispenser.

35

8. An electronically controlled sealing tape dispenser, as defined in Claim 1, wherein: said electronic means includes first electronic controls disposed in said housing.

5

9. An electronically controlled sealing tape dispenser, as defined in Claim 8, further comprising: remote second electronic controls operatively connected to said first electronic controls.

10

10. A method of electronically controlling a sealing tape dispenser, comprising:

(a) determining a first selected length of sealing tape to be dispensed; and

15

(b) employing electronic means to control dispensing of said first selected length of sealing tape.

20

11. A method of electronically controlling a sealing tape dispenser, as defined in Claim 10, further comprising:

(a) providing an idler wheel fixedly mounted on an idler wheel shaft disposed in a housing of said sealing tape dispenser, said idler wheel being disposed so as to rotate as said first selected length of sealing tape is dispensed; and

25

(b) measuring rotation of said idler wheel shaft and outputting a signal to said electronic means representative of rotations of said idler wheel shaft.

30

12. A method of electronically controlling a sealing tape dispenser, as defined in Claim 11, further comprising: using an optical encoder to measure rotation of said idler wheel shaft.

35

-13-

13. A method of electronically controlling a sealing tape dispenser, as defined in Claim 10, further comprising:

- 5 (a) adding or subtracting an increment of sealing tape length to or from said first selected length of sealing tape; and
- (b) means to double or halve length of said first selected length of sealing tape, including said increment of sealing tape length.

10

14. A method of electronically controlling a sealing tape dispenser, as defined in Claim 10, further comprising: automatically correcting for errors in length of said first selected length of sealing tape.

15

15. A method of electronically controlling a sealing tape dispenser, as defined in Claim 14, further comprising: employing an electronic memory which includes therein correction lengths as a function of

20 selected lengths of sealing tape.

16. A method of electronically controlling a sealing tape dispenser, as defined in Claim 10, further comprising: automatically dispensing from said sealing

25 tape dispenser a second selected length of sealing tape after said first selected length of sealing tape is removed and in response to said first selected length of sealing tape being removed from said electronically controlled sealing tape dispenser, without any other

30 action on the part of an operator of said electronically controlled sealing tape dispenser.

17. A method of electronically controlling a sealing tape dispenser, as defined in Claim 10, further

35 comprising: providing said electronic means including first electronic controls disposed in said housing.

-14-

18. A method of electronically controlling a sealing tape dispenser, as defined in Claim 10, further comprising: providing remote second electronic controls operatively connected to said first electronic controls.

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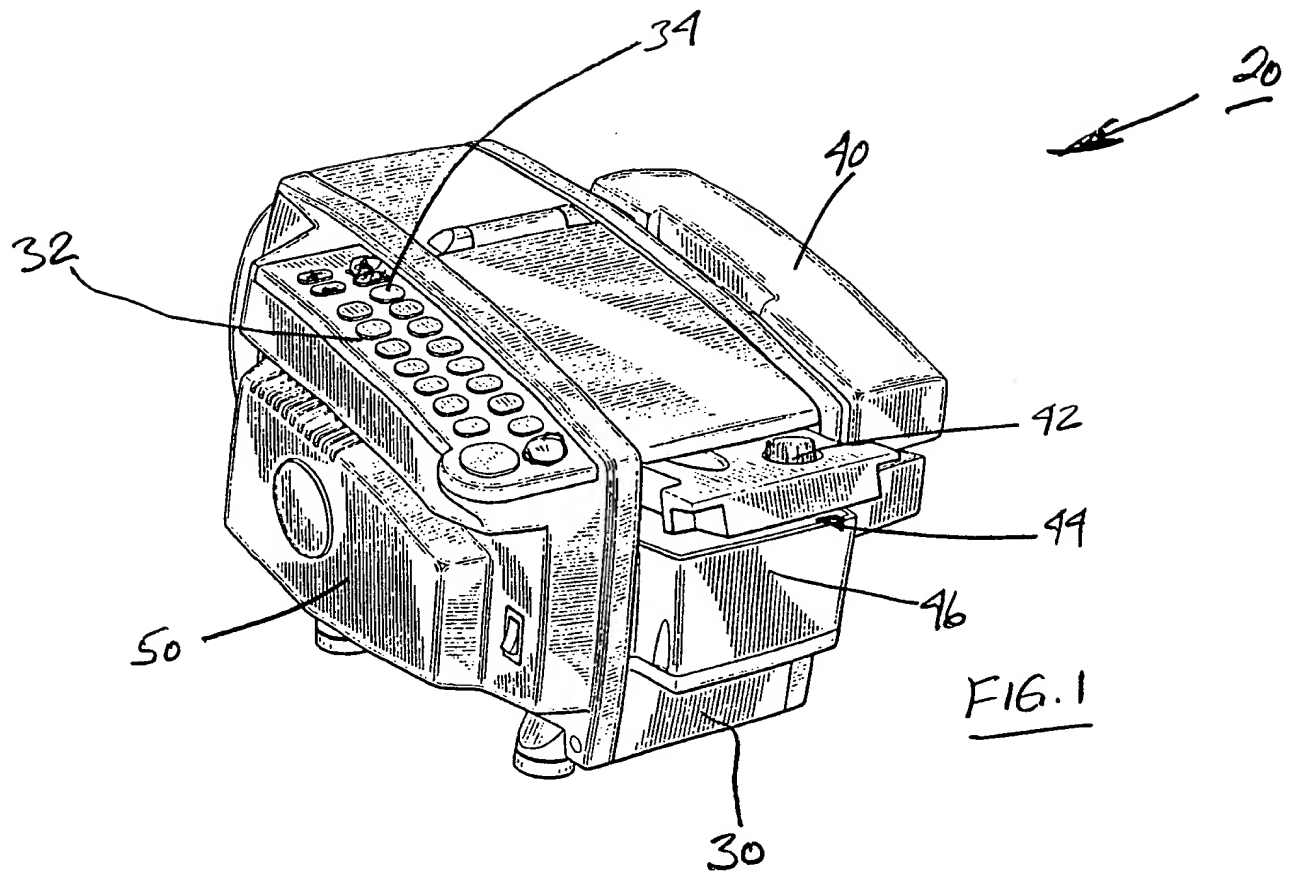
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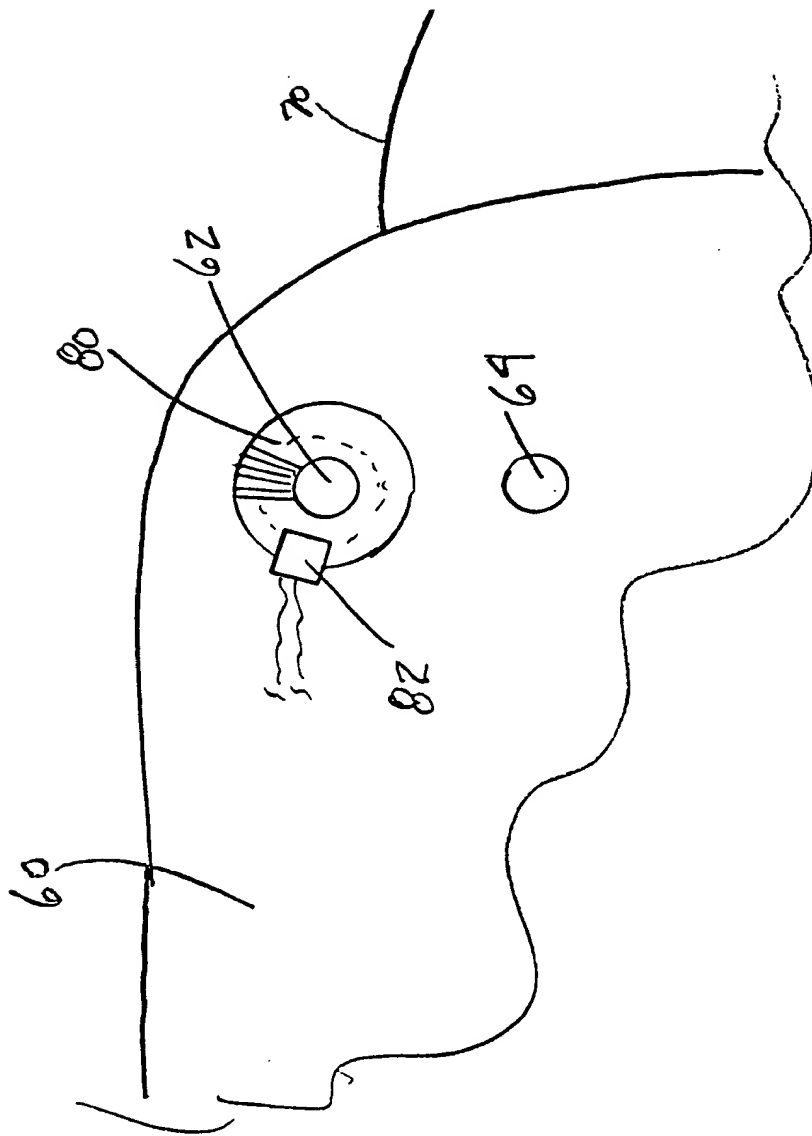


FIG. 2
(PRIOR ART)

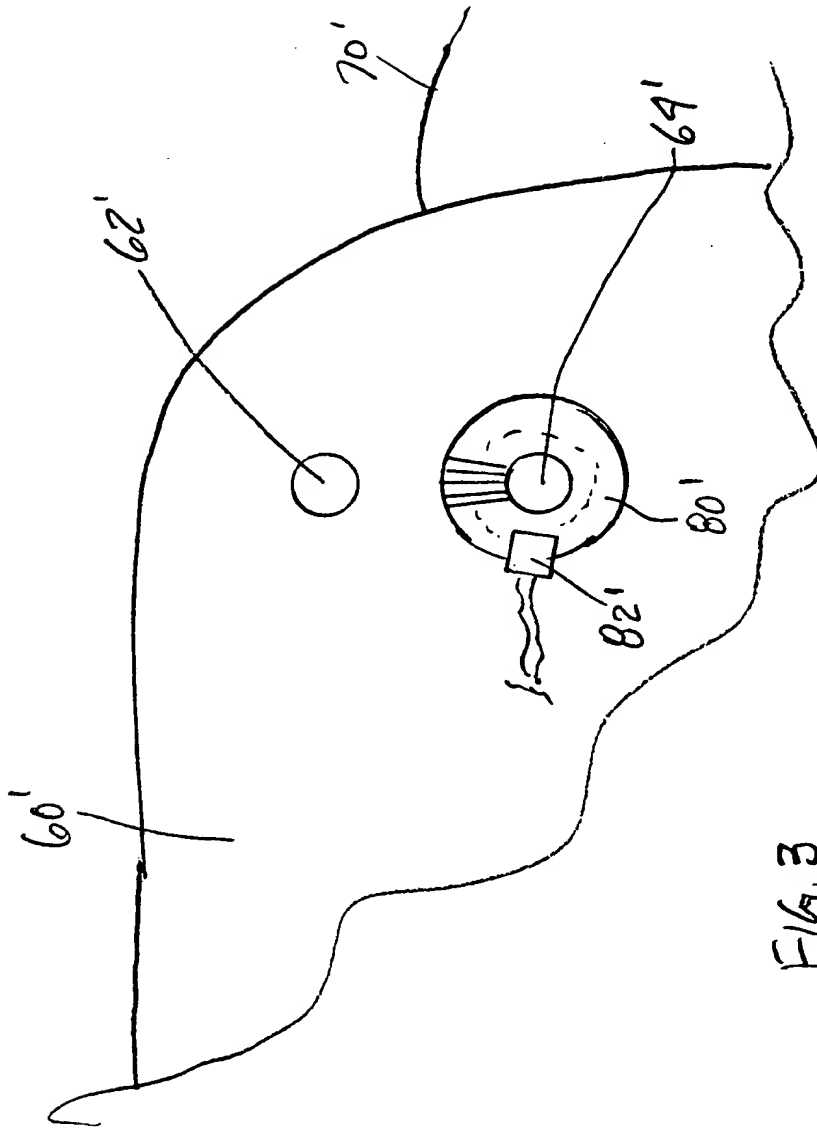
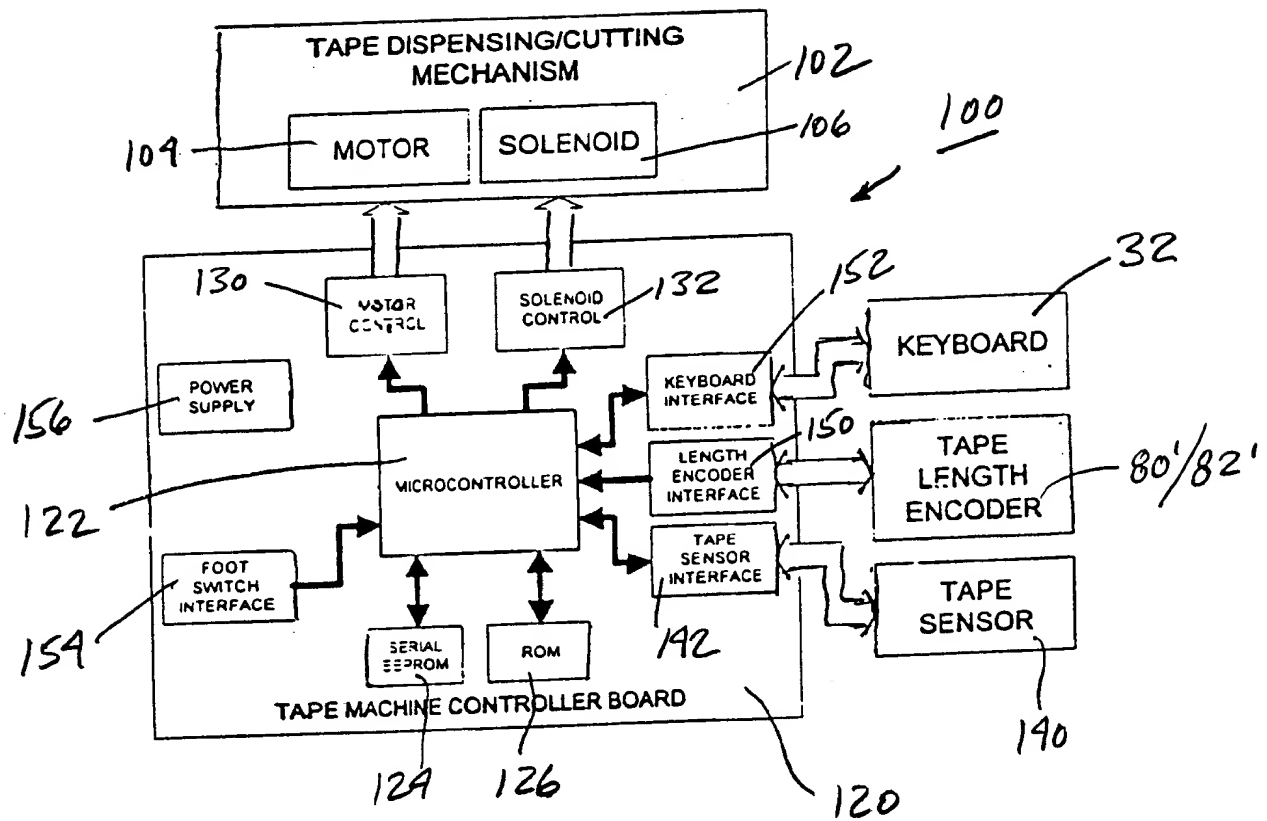


FIG. 3

FIG. 9

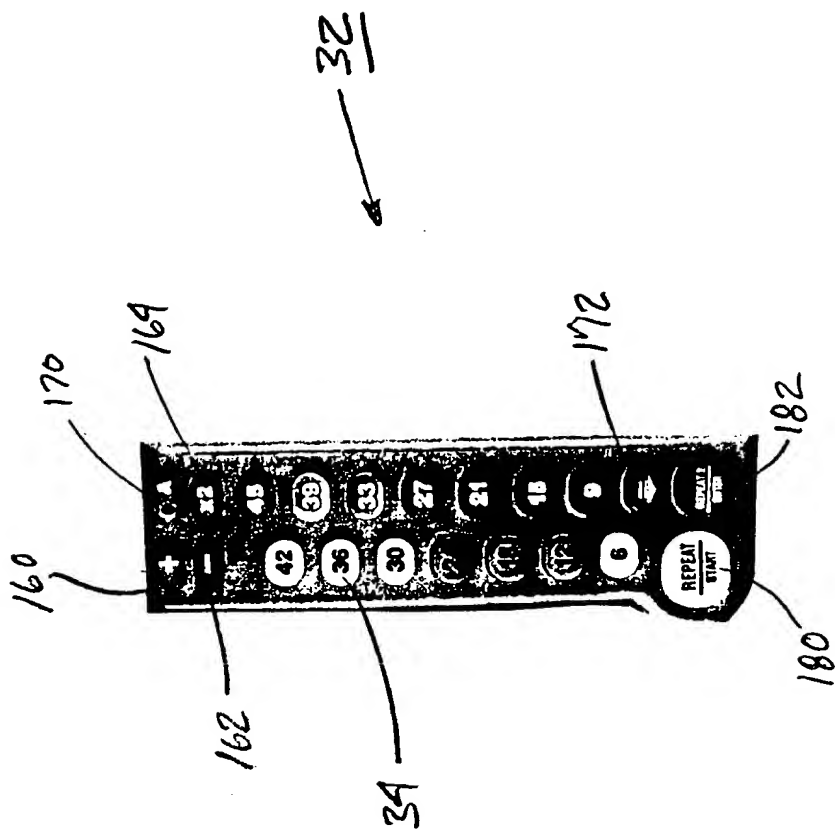


FIG. 5

User action	Machine Response
Press "Auto"	Enter Auto mode
Press "36"	Dispense 36" tape,
Press "ENTER"	store 1 st length of sequence
Remove tape	No response
Press "18"	Dispense 18" tape, store 2 nd length of sequence
Remove tape	No response
Press "ENTER"	store 2 nd length of sequence
Press "START"	Dispense 36" tape, if tape not removed wait
Remove tape	Automatically dispense 18" tape
Remove tape	Automatically dispense 36" tape
Remove tape	Automatically dispense 18" tape
Remove tape	Automatically dispense 36" tape
ad infinitum	

FIG. 6

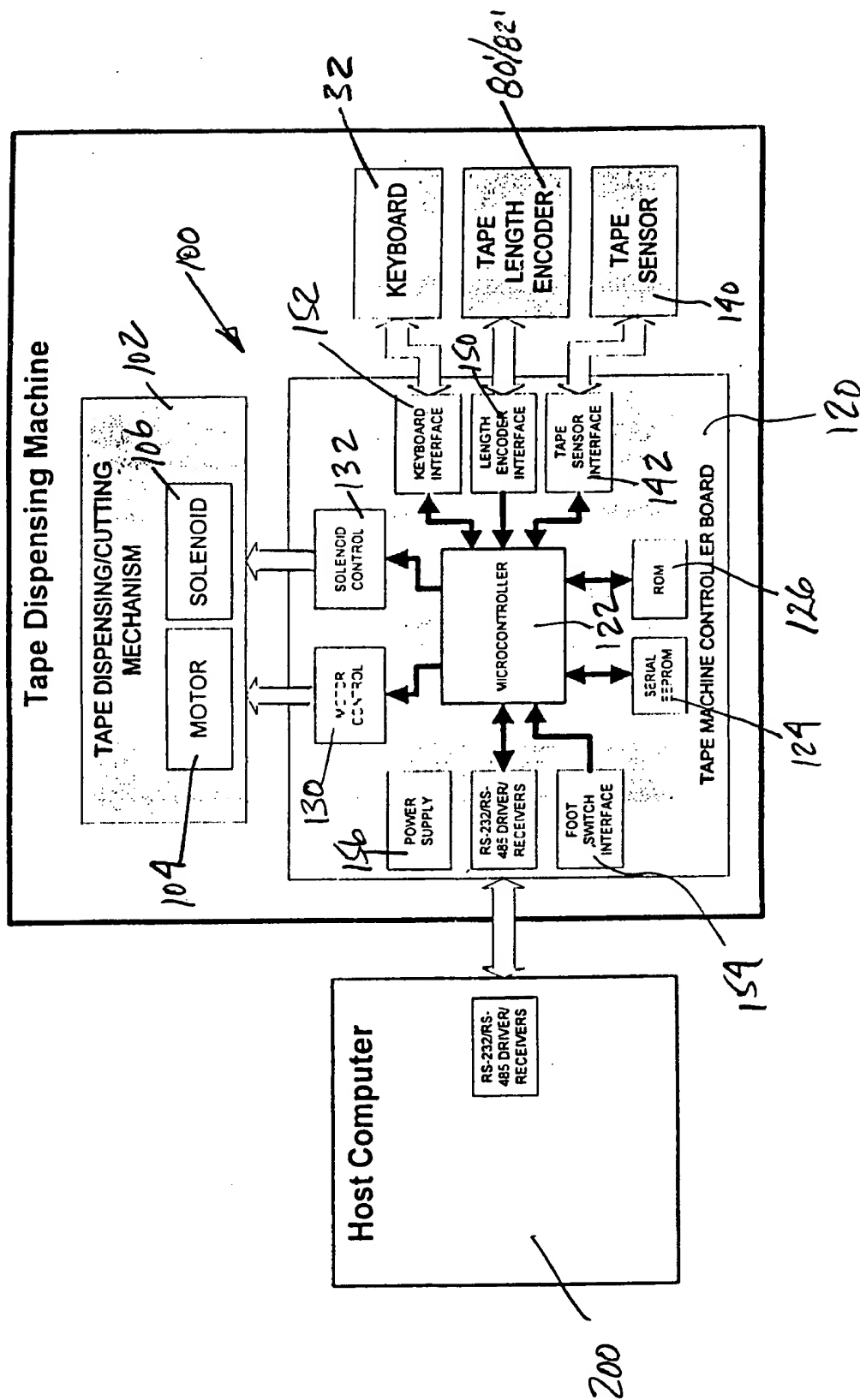


FIG. 7

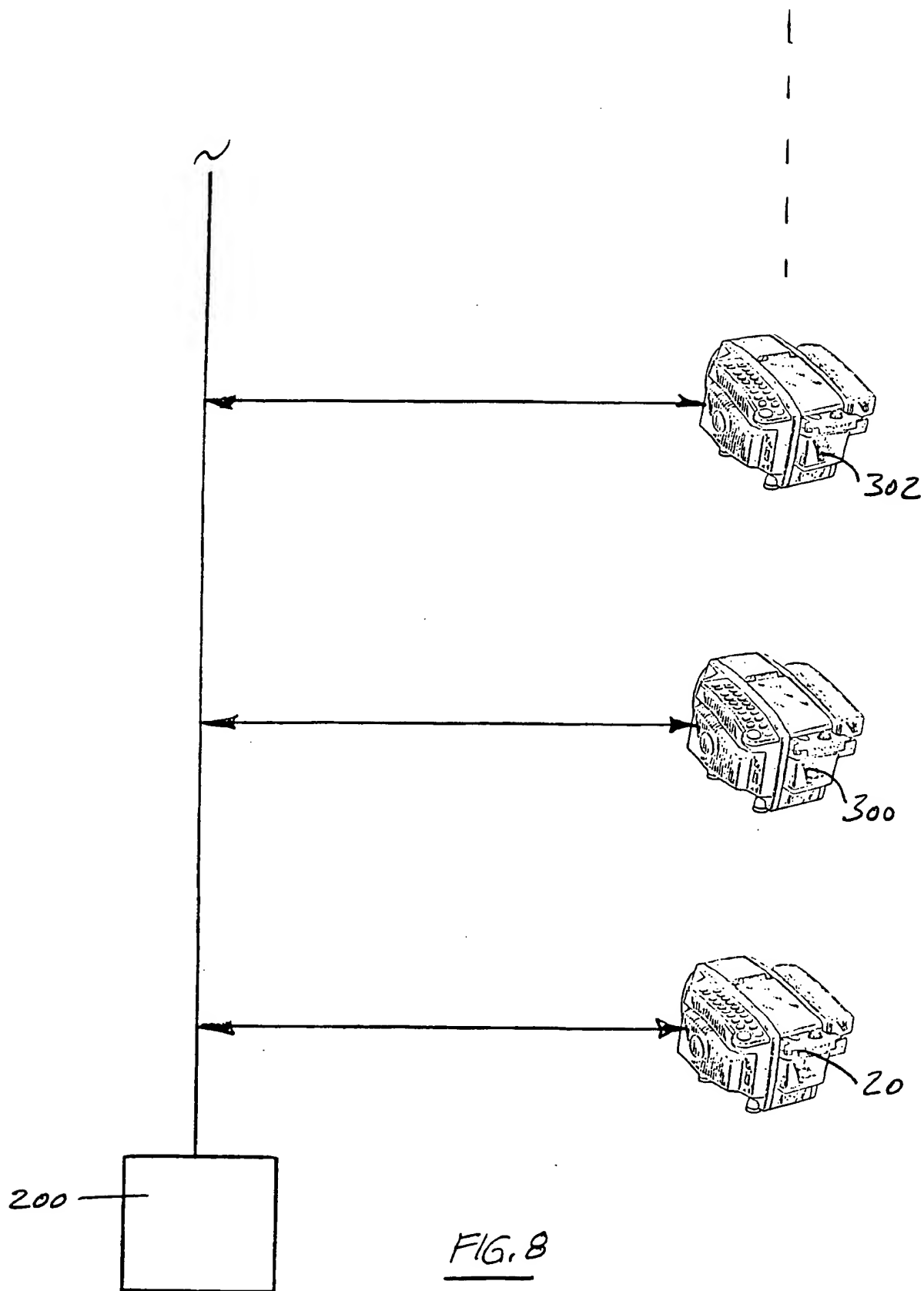


FIG. 8

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 July 2000 (20.07.2000)

PCT

(10) International Publication Number
WO 00/41960 A1

(51) International Patent Classification⁷: B65H 49/34,
20/02, G06F 19/00

(21) International Application Number: PCT/US00/01294

(22) International Filing Date: 19 January 2000 (19.01.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/116,275 19 January 1999 (19.01.1999) US

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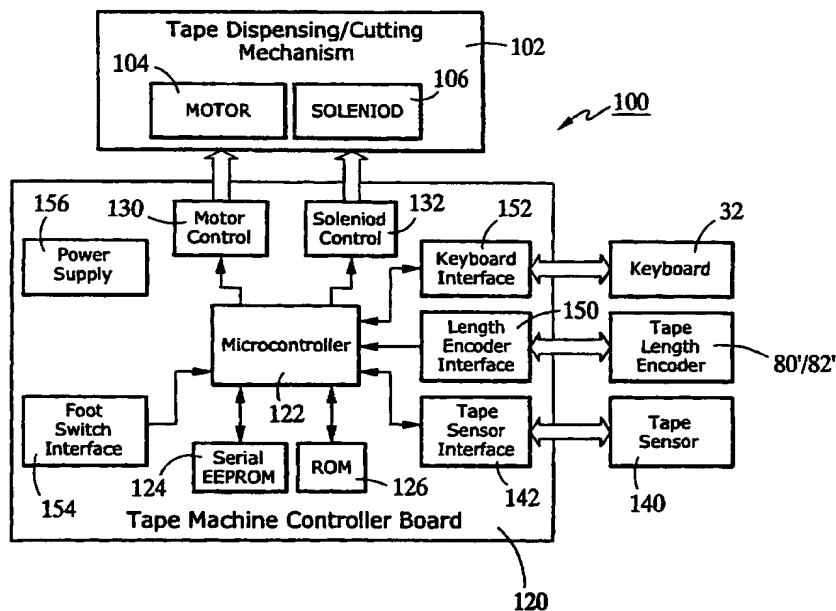
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(81) Designated States (national): AE, AL, AM, AT, AU, AZ,
BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK,
DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,
IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,
LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT,
RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA,
UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent
(AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent
(AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU,
MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: ELECTRONICALLY CONTROLLED SEALING TAPE DISPENSER AND METHOD



(57) Abstract: In a preferred embodiment, an electronically controlled sealing tape dispenser (20, Fig. 1), including: a housing (30, Fig. 1); apparatus (32, Fig. 1) disposed in the housing (30, Fig. 1) to select a first selected length of sealing tape (70, Fig. 2) to be dispensed; apparatus (102, Fig. 4) disposed in the housing (30, Fig. 1) to dispense the first selected length of sealing tape (70, Fig. 4); and electronic apparatus (120, Fig. 4) to control dispensing of the first selected length of sealing tape (70, Fig. 4).



Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(48) Date of publication of this corrected version:

23 August 2001

(15) Information about Correction:

see PCT Gazette No. 34/2001 of 23 August 2001, Section II

Description
Electronically Controlled Sealing Tape
Dispenser and Method

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Technical Field

The present invention relates to sealing tape dispensers generally and, more particularly, but not by way of limitation, to novel electronically controlled sealing tape dispenser and method of use.

Background Art

Mechanical and electronically controlled sealing tape dispensers are widely used for measuring a selected length of tape, cutting the tape, and also moistening the tape when required. The type of tape used with such machines can be paper, cloth, plastic, reinforced, or combinations of these, for example.

Previously known tape dispensers have certain limitations. For one, the length of tape is typically determined by use of an encoder attached to a motor-driven shaft that presses against one side of the tape, while an idler wheel presses against the other side of the tape. This arrangement is subject to slippage, both when the wheel starts rotating and when power is removed from the motor. The percentage slippage varies with the length of tape being dispensed. Also, the tape cannot be cut instantaneously so the machine commands the tape to be cut before the selected length has been reached. Errors in length can occur because of tape speed variations and the fact that more or less than the amount of expected tape can be dispensed because the tape speed is not factored into the method of determining when to cut the tape. To compensate for these errors, it is common to set the tape dispenser to dispense a length of tape greater than necessary. While

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this doesn't usually affect the sealing of a carton, for example, the unnecessary length results in extra cost.

Another limitation is that, although tape dispensers typically have means to add or subtract an
5 increment of length and also have means to double or halve a selected length of tape, conventional tape dispensers have no means to double or halve the increment along with the selected length of tape.

A further limitation of conventional tape
10 dispensers is that, if a length of tape different from the length of tape previously dispensed is desired, it is necessary to press the necessary length selection button(s) to have the second length dispensed. This requires additional time on the part of the operator and
15 also offers the opportunity for the operator to request the wrong length of tape, thus creating unnecessary cost and/or waste. Some machines partially overcome this problem by providing a switch to select one length of tape or another.

20 Accordingly, it is a principal object of the invention to provide means and method to more accurately measure the length of tape being dispensed from a tape dispenser.

It is a further object of the invention to provide
25 means and method to double or halve an increment of length added to or subtracted from a selected length of tape.

It is an additional object of the invention to provide means and method for automatically dispensing
30 different lengths of tape without having to re-enter desired lengths to be dispensed.

It is another object of the invention to provide such means and method that are economically employed.

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Other objects of the present invention, as well as particular features, elements, and advantages thereof, will be elucidated in, or be apparent from, the following description and the accompanying drawing
5 figures.

Disclosure of Invention

The present invention achieves the above objects, among others, by providing, in a preferred embodiment,
10 an electronically controlled sealing tape dispenser, comprising: a housing; means disposed in said housing to select a first selected length of sealing tape to be dispensed; means disposed in said housing to dispense said first selected length of sealing tape; and
15 electronic means to control dispensing of said first selected length of sealing tape.

Brief Description of Drawings

Understanding of the present invention and the
20 various aspects thereof will be facilitated by reference to the accompanying drawing figures, submitted for purposes of illustration only and not intended to define the scope of the invention, on which:

Figure 1 is an isometric view of an electronic
25 tape dispenser in which the present invention may be employed.

Figure 2 is a fragmentary side elevational view of a conventional tape dispenser.

Figure 3 is a fragmentary side elevational view of
30 a tape dispenser according to the present invention.

Figure 4 is a block diagram of a control system according to the present invention.

Figure 5 is a top plan view of the tape dispenser keypad according to the present invention.

35 Figure 6 shows the sequence of steps for programming a tape dispenser of the present invention to automatically dispense desired lengths of tape.

Figure 7 is a block diagram of the control system of Figure 4 operatively connected to a remote host computer.

Figure 8 is a schematic/block diagram showing a plurality of electronic tape dispensing machines operatively connected to the host computer of Figure 7.

Best Mode for Carrying Out the Invention

Reference should now be made to the drawing figures, on which similar or identical elements are given consistent identifying numerals throughout the various figures thereof, and on which parenthetical references to figure numbers direct the reader to the view(s) on which the element(s) being described is (are) best seen, although the element(s) may be seen also on other views.

Figure 1 illustrates an electronically controlled tape dispenser of the type in which the present invention may be employed, the tape dispenser being generally indicated by the reference numeral 20.

Tape dispenser 20 includes a housing 30 having an external keypad 32 that includes a plurality of push buttons, as at 34. Push buttons 34 are used to select tape length to be dispensed from tape dispenser 20 and to perform other functions, as is described more fully below. Tape dispenser 20 further includes a water supply bottle 40, a water heater control 42, a slot 44 through which the tape (not shown) is dispensed, and a water applicator 46 for use when the tape is to be moistened. Electronic control circuitry is disposed within portion 50 of housing 30.

The elements of tape dispenser 20 described above are common both to conventional tape dispensers and to a tape dispenser in which the present invention may be employed.

Figure 2 illustrates the side of a conventional tape dispenser 60 that includes protruding therethrough a drive wheel shaft 62 and an idler wheel shaft 64. As

shaft 62 is coupled to an electric motor (not shown). To dispense tape 70 from tape dispenser 60, the idler wheel (not shown) mounted on idler wheel shaft 64 is raised by energization of a solenoid (not shown),
5 creating a nip between the idler wheel and the drive wheel (not shown) mounted on drive wheel shaft 62. Rotation of drive wheel shaft 62 thus causes tape 70 to be dispensed from tape dispenser 60. An apertured encoder wheel 80 is mounted to drive wheel shaft 62 to
10 rotate with the drive wheel shaft and an optical sensor 82 detects the rotation of the encoder wheel and provides an output signal representative of the number of rotations of the wheel. This signal is then used to determine the length of tape 70 dispensed. As is noted
15 above, however, slippage occurs between the drive wheel and tape 70, the percentage slippage varying in proportion to the length of the tape dispensed and, thus, the signal does not give an accurate measurement of the length of tape 70 dispensed. Furthermore, error
20 is introduced when tape 70 is cut, as is also noted above.

Figure 3 illustrates the approach of the present invention to overcoming the problem of errors in sensed dispensed tape length. Here, a tape dispenser 60' has a
25 drive wheel shaft 62' and an idler wheel shaft 64', all with the same forms and functions as described above with reference to Figure 2. In this case, however, an apertured encoder wheel 80' is mounted on idler wheel shaft 64'. An optical sensor 82' senses the rotation of
30 idler wheel shaft 64' and provides a much more accurate measurement of the length of tape 70' than does optical sensor 80 (Figure 2), since any movement of the tape will be sensed. Of course, other types of encoder devices may be employed as well.

35 Figure 4 illustrates a control system according to the present invention, the control system being indicated generally by the reference numeral 100. Control system 100 includes a tape dispensing/cutting

discussed above, and a solenoid 106 that operates a blade to cut the tape. Control system 100 also includes a tape machine controller board 120 that has a microcontroller 122 with memories 124 and 126.

5 Microcontroller 122 is connected to tape dispensing/cutting mechanism 102 through motor control 130 and solenoid control 132. Microcontroller 122 is also connected to an optical tape sensor 140 through a tape sensor interface 142, the optical tape sensor being
10 provided to sense the presence or absence of tape near its exit from the tape machine. Microcontroller 122 is further connected to tape length encoder 80'/82' (Figure 3) through a length encoder interface 150, to keyboard, or keypad, 32 through a keyboard interface 152, and to a
15 foot switch interface 154 that permits the tape machine to dispense tape when a foot switch (not shown) is depressed. A power supply 156 provides electrical power to the various components of control system 100.

Figure 5 illustrates keypad 32 and plurality of
20 push buttons, as at 34. Push buttons 34 that have numerals thereon can be depressed to command tape machine 20 (Figure 1) to dispense tape of a selected length. Push button 160 with "+" thereon adds and increment to the length of tape dispensed, push button
25 162 with "-" thereon subtracts an increment from the length of tape dispensed, while push button 164 doubles or halves the length of tape dispensed. Whether the length is doubled or halved depends on the length of tape selected, with the lengths of shorter pieces being
30 doubled and the lengths of longer pieces being halved. Push button 170 is used to select an automatic mode, discussed below, and depressing push button 172 will cause the tape machine to dispense tape as long as push button 172 is depressed. Push buttons 180 and 182
35 recall tape lengths tape previously entered into memory.

The present invention may provide a further method of improving tape length accuracy. In the present case, errors in tape length can be empirically determined.

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(Figure 4) and the proper correction length can then be applied by microcontroller 122 for each length of tape selected. The data in memory 124 can take, for example, the form of a lookup table, with interpolation between
5 entries if desired, or it can take, for example, the form of an algorithm for continuously variable correction lengths.

Microcontroller 122 (Figure 4) can also be programmed to double or halve a selected length of tape
10 including any increment of length added to or subtracted from the selected length of tape. Thus, assume that the units on keypad 32 (Figure 5) were in inches and that one wished to dispense a piece of tape having a length of 26 inches. One could then, for example, depress push
15 button "12", then depress push button "+" twice to add two increments of one-half-inch each, and then press push button "2X". Now, when push button "REPEAT/START" is depressed, a piece of tape having a length of 26 inches will be dispensed.

20 The use of push button 170 and suitable programming of microcontroller 122 can produce automatic dispensing of tape from tape dispenser 20 (Figure 1). Push button 170, "A", or "AUTO" (Figure 5) toggles the tape dispenser between automatic and normal modes. A
25 buzzer can produce an audible beep when entering the automatic mode and when exiting back to normal mode. When the automatic mode is entered, the dispenser is ready to set up a tape sequence. Depressing push button 180, "REPEAT/START" (Figure 5), immediately after
30 entering automatic mode will skip setup and use the last stored sequence. If no sequence is stored, then a default sequence, e.g., repeating four-inch lengths is used.

To set up a length sequence, the user begins by
35 pressing push button 170 (Figure 5) to enter the automatic mode. The user then dispenses up to three pieces of tape of the length and in the order of the desired sequence. Microcontroller 122 (Figure 4) stores

push button 180, "REPEAT/START" (Figure 5), to begin the automatic sequence, at which time the first piece of tape in the sequence is produced. When the first piece of tape is removed, the tape dispenser automatically produces the second piece of tape in the sequence, and so on. The user actions and machine responses shown on Figure 6 indicate the process for setting up the tape dispenser to produce a continuous sequence of alternating 36- and 18-inch lengths of tape.

While the present invention is indicated, for illustrative and practical purposes, as being able to automatically produce up to three different lengths of tape to use, for example, an "H" pattern in sealing a carton, it will be understood that the present invention may be employed to produce any number of different lengths if desired.

Figure 7 illustrates control system 100 operatively connected to a remote host computer, or controller, 200. Host computer may actually provide control inputs for one or more of the functions of tape dispenser 20 and/or it may simply provide bookkeeping functions, such as tracking accumulated lengths of tape dispensed, the numbers of pieces of tape dispensed, the rate of use of the tape dispenser, or other items relating to the use of the tape dispenser. This information can be used, for example, to determine when the roll of tape in tape dispenser 20 requires replacement.

It will be understood that RS-232 driver/receiver transmission protocol may be used when host computer 200 is operatively connected only to tape dispenser 20 and that RS-485 driver/receiver transmission protocol may be used when more than one tape dispenser is operatively connected to the host computer. Transmission may be over hard wired lines or it may be via RF communication means.

Figure 8 illustrates the latter situation noted immediately above in which host computer 200 is

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dispensers 300 and 302. Of course, any number of tape dispensers may be operatively connected to host computer 200.

In the embodiments of the present invention described above, it will be recognized that individual elements and/or features thereof are not necessarily limited to a particular embodiment but, where applicable, are interchangeable and can be used in any selected embodiment even though such may not be specifically shown.

Terms such as "upper", "lower", "inner", "outer", "inwardly", "outwardly", and the like, when used herein, refer to the positions of the respective elements shown on the accompanying drawing figures and the present invention is not necessarily limited to such positions.

It will thus be seen that the objects set forth above, among those elucidated in, or made apparent from, the preceding description, are efficiently attained and, since certain changes may be made in the above construction and/or method without departing from the scope of the invention, it is intended that all matter contained in the above description or shown on the accompanying drawing figures shall be interpreted as illustrative only and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

30

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Claims

1. An electronically controlled sealing tape dispenser, comprising:

- 5 (a) a housing;
- (b) means disposed in said housing to select a first selected length of sealing tape to be dispensed;
- 10 (c) means disposed in said housing to dispense said first selected length of sealing tape; and
- (d) electronic means to control dispensing of said first selected length of sealing tape.

15 2. An electronically controlled sealing tape dispenser, as defined in Claim 1, further comprising:

- (a) an idler wheel fixedly mounted on an idler wheel shaft disposed in said housing, said idler wheel being disposed so as to rotate as said first selected length of sealing tape is dispensed; and
- 20 (b) means mounted on said idler wheel shaft to measure rotation of said idler wheel shaft and to output a signal to said electronic means representative of rotations of said idler wheel shaft.
- 25

3. An electronically controlled sealing tape dispenser, as defined in Claim 2, wherein: said means

30 mounted on said idler wheel comprises an optical encoder.

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4. An electronically controlled sealing tape dispenser, as defined in Claim 1, further comprising:

- 5 (a) means to add or subtract an increment of sealing tape length to or from said first selected length of sealing tape; and
(b) means to double or halve length of said first selected length of sealing tape;

and wherein:

- 10 (c) said means to double or halve length of said first selected length of sealing tape also doubles or halves, respectively, said increment of sealing tape length.

15 5. An electronically controlled sealing tape dispenser, as defined in Claim 1, further comprising:
means to automatically correct for errors in length of said first selected length of sealing tape.

20 6. An electronically controlled sealing tape dispenser, as defined in Claim 5, further comprising:
electronic memory which includes therein correction lengths as a function of selected lengths of sealing tape.

25 7. An electronically controlled sealing tape dispenser, as defined in Claim 1, further comprising:
means to automatically dispense from said sealing tape dispenser a second selected length of sealing tape after said first selected length of sealing tape is removed
30 and in response to said first selected length of sealing tape is removed from said electronically controlled sealing tape dispenser, without any other action on the part of an operator of said electronically controlled sealing tape dispenser.

35

8. An electronically controlled sealing tape dispenser, as defined in Claim 1, wherein: said electronic means includes first electronic controls disposed in said housing.

5

9. An electronically controlled sealing tape dispenser, as defined in Claim 8, further comprising: remote second electronic controls operatively connected to said first electronic controls.

10

10. A method of electronically controlling a sealing tape dispenser, comprising:

(a) determining a first selected length of sealing tape to be dispensed; and

15 (b) employing electronic means to control dispensing of said first selected length of sealing tape.

11. A method of electronically controlling a sealing tape dispenser, as defined in Claim 10, further comprising:

20

(a) providing an idler wheel fixedly mounted on an idler wheel shaft disposed in a housing of said sealing tape dispenser, said idler wheel being disposed so as to rotate as said first selected length of sealing tape is dispensed; and

25

(b) measuring rotation of said idler wheel shaft and outputting a signal to said electronic means representative of rotations of said idler wheel shaft.

30

12. A method of electronically controlling a sealing tape dispenser, as defined in Claim 11, further comprising: using an optical encoder to measure rotation of said idler wheel shaft.

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13. A method of electronically controlling a sealing tape dispenser, as defined in Claim 10, further comprising:

- 5 (a) adding or subtracting an increment of sealing tape length to or from said first selected length of sealing tape; and
- (b) means to double or halve length of said first selected length of sealing tape, including said increment of sealing tape length.

10

14. A method of electronically controlling a sealing tape dispenser, as defined in Claim 10, further comprising: automatically correcting for errors in length of said first selected length of sealing tape.

15

15. A method of electronically controlling a sealing tape dispenser, as defined in Claim 14, further comprising: employing an electronic memory which includes therein correction lengths as a function of

20 selected lengths of sealing tape.

16. A method of electronically controlling a sealing tape dispenser, as defined in Claim 10, further comprising: automatically dispensing from said sealing

25 tape dispenser a second selected length of sealing tape after said first selected length of sealing tape is removed and in response to said first selected length of sealing tape being removed from said electronically controlled sealing tape dispenser, without any other

30 action on the part of an operator of said electronically controlled sealing tape dispenser.

17. A method of electronically controlling a sealing tape dispenser, as defined in Claim 10, further

35 comprising: providing said electronic means including first electronic controls disposed in said housing.

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18. A method of electronically controlling a sealing tape dispenser, as defined in Claim 10, further comprising: providing remote second electronic controls operatively connected to said first electronic controls.

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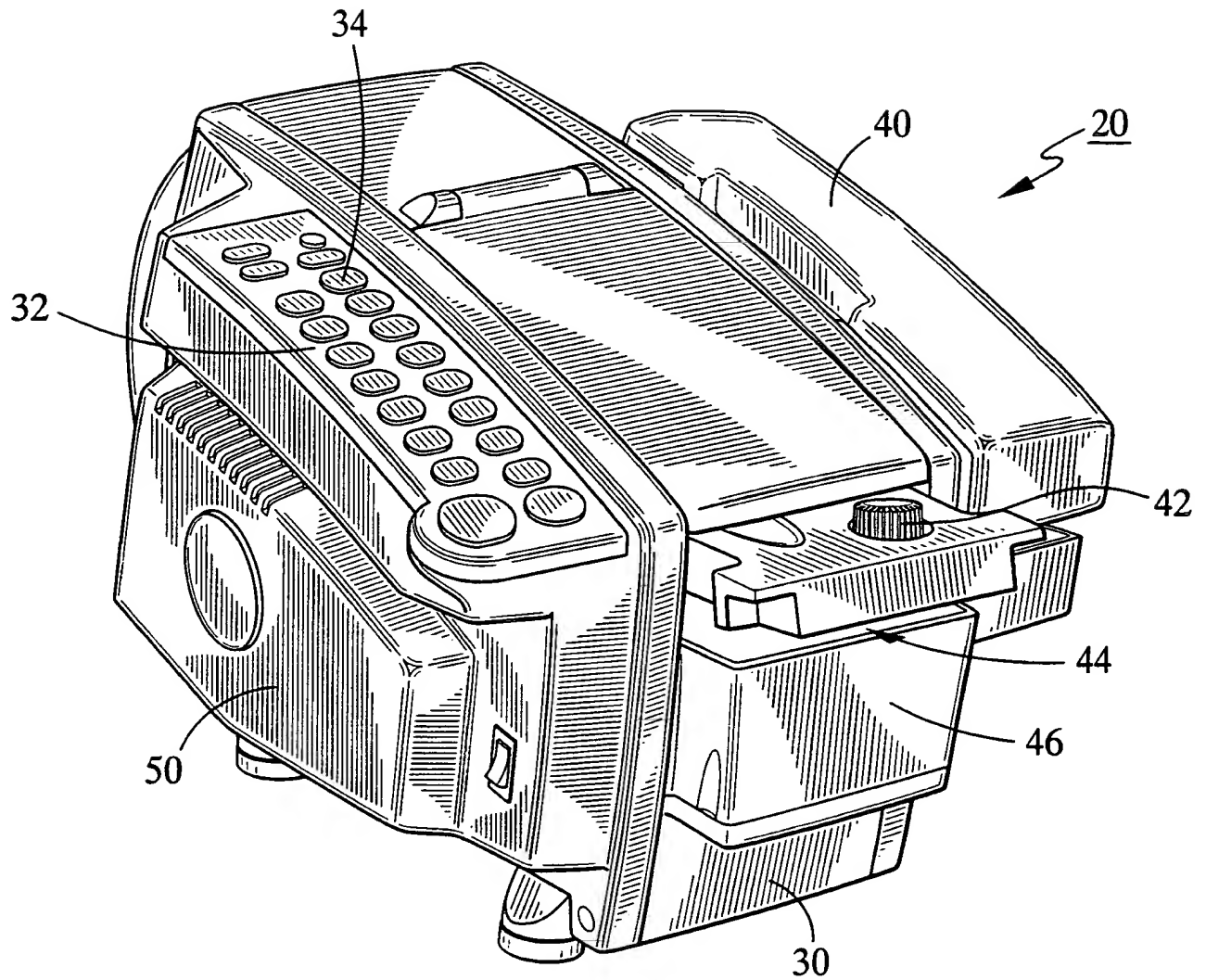


FIG. 1

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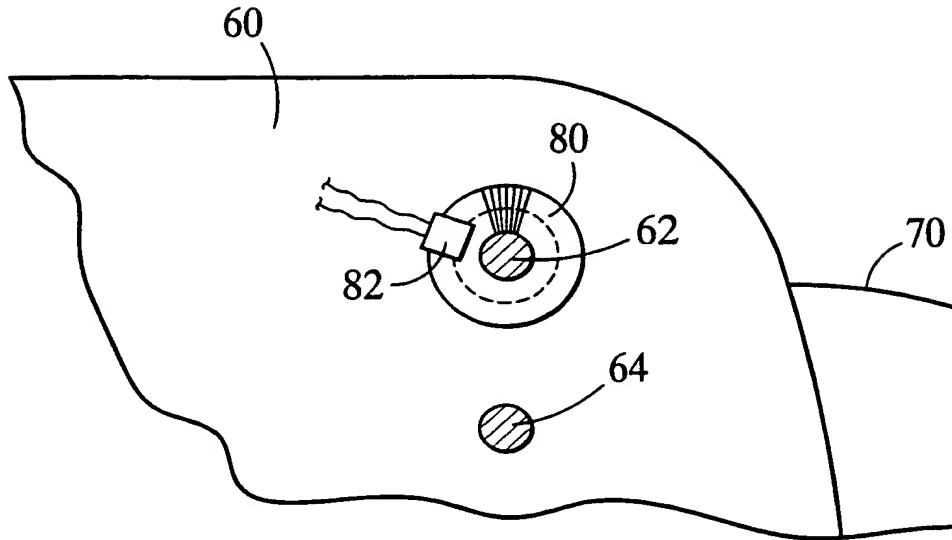


FIG. 2
(Prior Art)

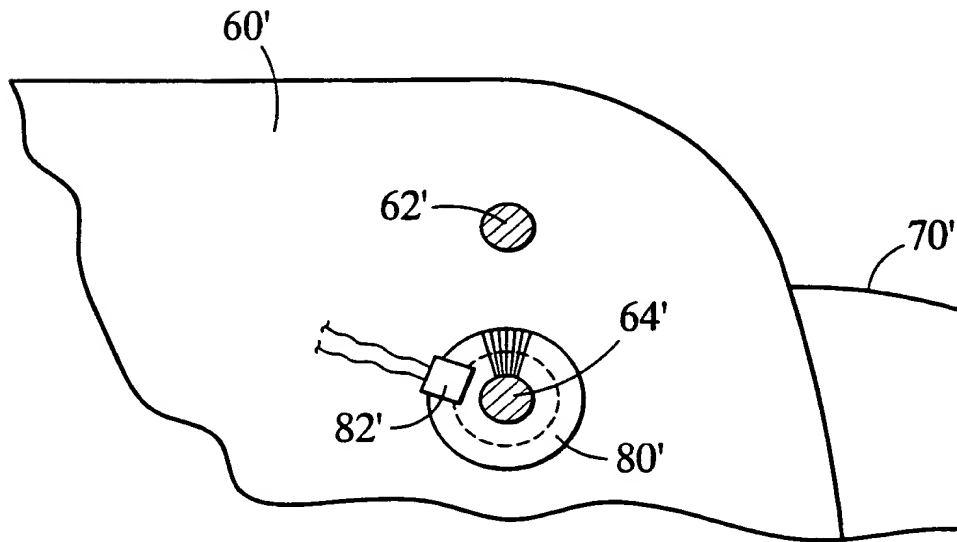


FIG. 3

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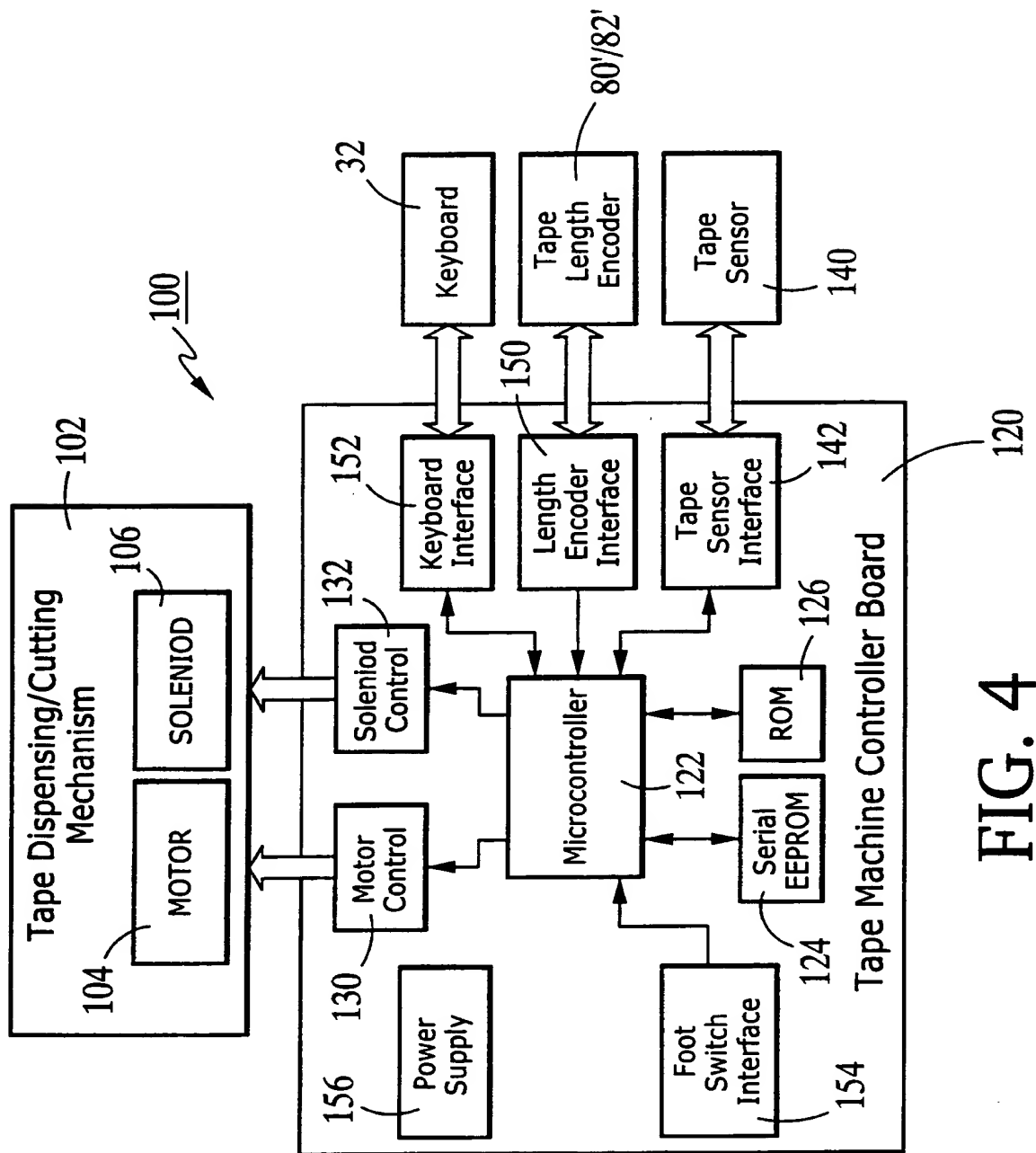


FIG. 4

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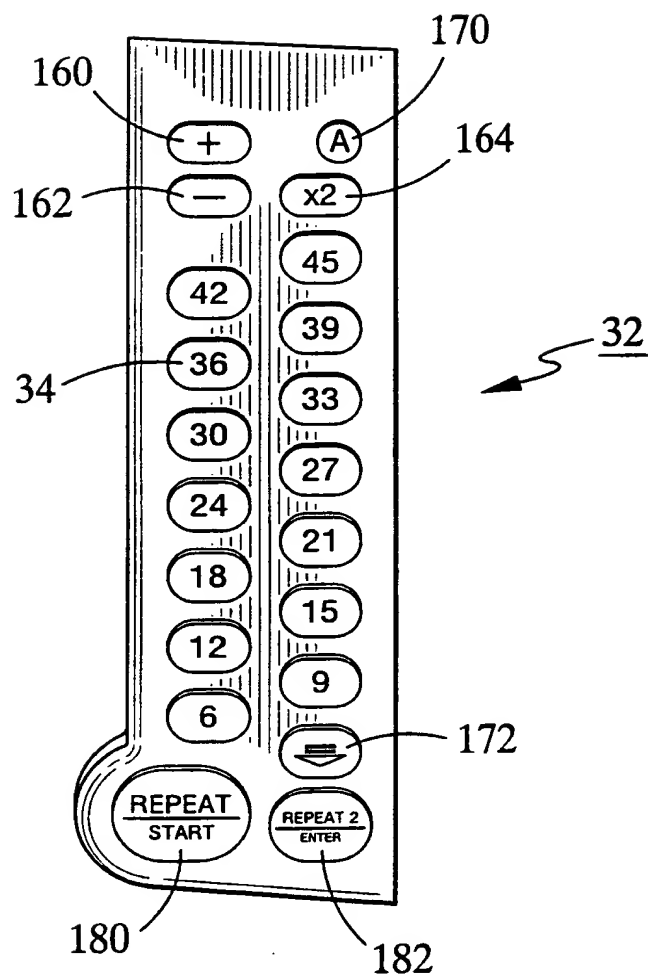


FIG. 5

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User action	Machine Response
Press "Auto"	Enter Auto mode
Press "36"	Dispense 36" tape,
Press "Enter"	Store 1st length of sequence
Remove Tape	No response
Press "18"	Dispense 18" tape, store 2nd length of sequence
Remove Tape	No response
Press "Enter"	Store 2nd length of sequence
Press "Start"	Dispense 36" tape, if tape not removed wait
Remove Tape	Automatically dispense 18" tape
Remove Tape	Automatically dispense 36" tape
Remove Tape	Automatically dispense 18" tape
Remove Tape	Automatically dispense 36" tape
ad infinitum	

FIG. 6

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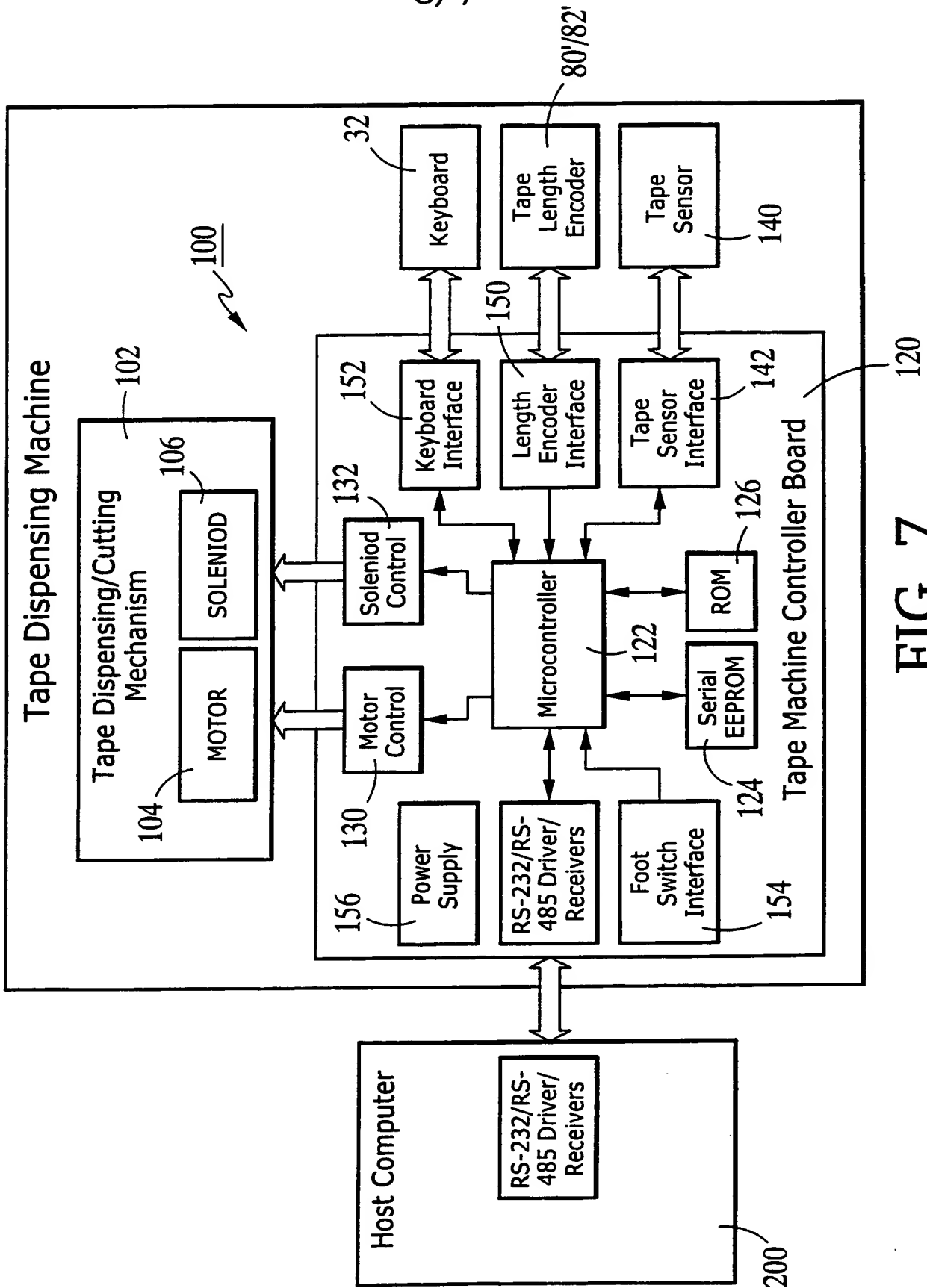


FIG. 7

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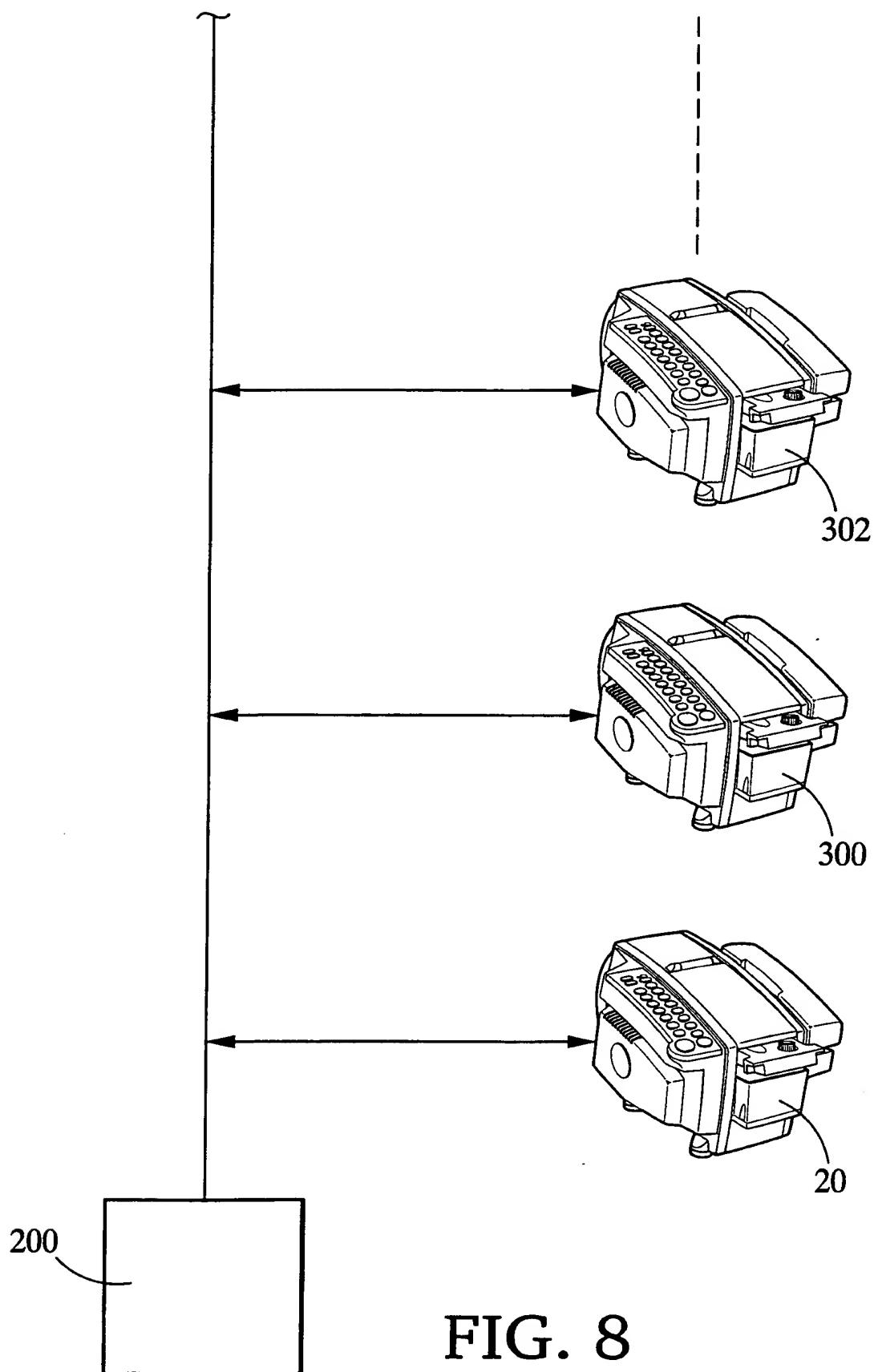


FIG. 8